Ending the Sale of Energy Drinks to Children

Department of Health and Social Care

RPC rating: fit for purpose

The Impact Assessment (IA) was initially submitted for RPC scrutiny and received an initial review notice (IRN) and was resubmitted post-IRN. The post-IRN submission subsequently received a 'not fit for purpose' rating. Following that, the Department revised the IA and resubmitted it for RPC scrutiny. The IA is now fit for purpose as a result of the Department's response to the RPC's IRN and subsequent 'not fit for purpose' rated opinion.

Description of Proposal

The proposal is to ban the sales of energy drinks to children under the age of 16 which includes sales from vending machines.

The policy aims to mitigate the potential negative effects associated with the excessive consumption of energy drinks by children.

The Department states that consumption of energy drinks by children and adolescents has been linked to low physical, psychological and educational wellbeing as well as sleep disturbances. The Department points towards surveys that suggest that more than two thirds of adolescents in the UK drink energy drinks and that they consume over 50% more than the EU average. Around half of adolescents who drink energy drinks consume more than one in a sitting and there are additional concerns that children cannot confidently distinguish between energy drinks and soft drinks. The IA notes that many larger retailers and supermarkets have voluntarily stopped selling energy drinks to under-16s, but many other retailers continue to sell these drinks to children and adolescents.

Impacts of proposal

Costs

The proposal will significantly impact retailers and energy drink manufacturers, who will no longer be able to sell energy drinks to under-16s. Their estimated losses are

£28.9 million[1], to retailers and £189.6 million to energy drink manufacturers. The Department suggests these costs will be offset in net present social value (NPSV) terms as money not spent on purchases of energy drinks is assumed to be spent on soft drinks and elsewhere within the UK economy. The largest net costs are ongoing administration costs (£82.2 million), primarily consisting of identification checks borne by retailers. Familiarisation costs for businesses are estimated to be £6.3 million in the first year of the policy; this encompasses guidance, shelf labelling and staff training. In addition, there are ongoing enforcement costs, which fall on local authorities, who are supported by the Department, totalling £6.8 million. Costs to vending machine operators totals to £1.5 million.

Benefits

It is assumed that 90% of children who can no longer purchase an energy drink will opt for a soft drink instead which on average contain fewer calories. This shift in purchasing is expected to result in health benefits. The main monetised benefit of the proposal is estimated to be £1,545 million. This figure comes from a reduction in child daily calorie intake as children switch from energy drinks to soft drinks, resulting in improvements to their health. For 6 to 9 year olds, this is a 2.1[2] calorie reduction; for 10 to 15 year olds, a 7.7 calorie reduction; and for 16 & 17 year olds, a 10.2 calorie reduction. These have been monetised through the quality adjusted life years (QALY) approach. Additionally, the IA estimates a reduction in children's caffeine intake and a reduction in dental cavities; neither of these benefits has been monetised.

Small and micro businesses (SMBs)

The Department's analysis shows that 99% of energy drinks sold are manufactured by medium and large businesses, with SMBs making up the remaining 1%. The Department classifies 18,841 of the 36,455 convenience stores affected as micro, suggesting a large proportion of the remaining convenience stores are therefore small businesses. For the vending machine operators, the Department states that 80% of vending machine operators that are part of the Automatic Vending Association (AVA) are suggested to be small and micro businesses and thus will bear most of the costs to operators. The Department assumes that only 10% of vending machines selling energy drinks will need to be altered.

The RPC verifies the estimated equivalent annual net direct cost to business (EANDCB) of £59.3 million. This will be a qualifying regulatory provision that will score under the Business Impact Target.

[1] Unless otherwise stated, all figures in this section are given over a ten-year period in net present value terms
[2] Calorie reductions are measured in kcal units.

Quality of submission

Background

When the IA was initially submitted for RPC scrutiny, it received an IRN , it was then resubmitted to the RPC post IRN. The IA subsequently received a 'not fit for purpose' rating. The Department revised the IA and resubmitted it for RPC scrutiny and the RPC now considers it fit for purpose.

Issues addressed following the RPC's initial review and subsequent 'not fit for purpose' rated opinion:

As previously submitted, the IA included several issues that meant that the RPC did not consider it fit for purpose. The initial review and succeeding opinion also highlighted further areas for improvement. In response, the Department has revised the IA. As originally submitted the assessment was not fit for purpose for the following main reasons:

1. **EANDCB:** The Department's initial calculations of the EANDCB rested on various unsubstantiated assumptions, that were not sufficiently evidenced. As defined in the RPC's Proportionality guidance, it was the Committee's view that it was proportionate for the Department to undertake more detailed studies to derive accurate estimates of some key parameters that affect the EANDCB. The main unsupported assumptions were in the following areas: The displacement rate to soft drinks; the price differential between energy drinks and substitute products; and the reasons children consume energy drinks. The Department addressed these points following the RPC's initial review by reclassifying the displacement impacts as indirect.
    a. **Out of home sector:** In its original submission, the Department did not estimate the impact on the out of home sector. After the initial review, the Department provided a detailed breakdown of the calculation of costs in the out of home sector, but in the RPC's view the estimate that 10 per cent of the out of home retailers stocked energy drinks was unsubstantiated and therefore suggested the Department should carry out further research. The Department has now used management consultant association (MCA) data to estimate the relative proportions of different categories of out of home businesses that sell energy drinks.
    b. **Profit margins:** The Department has explained that it has based its assumption on profit margins and mark-ups on published average data (paragraph 239). The RPC is pleased to see that the Department has

now conducted sensitivity analysis around lost profit and mark-ups for retailers and manufacturers (paragraph 751).

c. **0% growth rate:** The RPC considered the use of a market growth rate of 0% to be arbitrary. The RPC advised the Department to revise the scenarios to reflect current evidence including the fact that there had recently been two new entrants to the market. The Department has now assumed a growth rate of 2% and has done further sensitivity analysis on impacts considering different market growth rates.

d. **Proxy Purchasing:** The RPC noted that the 0% proxy purchasing rate used by the Department was not based on evidence. The Department was notified that it must collect more evidence on the potential rate of proxy purchasing, due to it not being banned as part of the regulation and the sensitivity of this assumption to the EANDCB. The Department has now used the purchasing of cigarettes as a proxy for proxy purchasing of energy drinks.

e. **Vending machines:** The RPC advised the Department to seek further evidence to support the premise that operators may simply replace energy drinks in vending machines with soft drinks due to their lack of prevalence (2 out of 40 slots on average), instead of introducing age verification methods. While the Department has been unable to find evidence, it has lowered the assumed replacement rate and performed sensitivity analysis on these assumptions, which the RPC considers to be proportionate.

2. **SaMBA:** The RPC did not consider the Department's initial assessment of the minimal lost sales costs to SMBs to be robust, because it was based on information from a manufacturer that makes up 0.7% of the market. The Department was advised to support their points with more evidence in this section. The Department has now included data from the AVA census and has consulted with some key stakeholders.

The RPC recognises that the Department has addressed several of the points raised for improvement following the IRN and the RPC's previous opinion. RPC guidance on direct and indirect impacts has been applied correctly. RPC recommendations on additional policy considerations, analysing evidence presented from other countries, clarification on the description of the calorie model and a comprehensive explanation of the cohort methodology are all recognised. The RPC is pleased to see that the Department has undertaken sensitivity analysis on a range of different factors, including the potential risks of the reformulation of energy drinks to circumvent the ban. The RPC is satisfied that the Department has considered the possibility of consumption displacement among adolescents to harmful substances, as a result of the policy. The RPC commends the Department's intention to consider unintended consequences of the regulation akin to this issue, as part of a post-implementation review.

The RPC has however identified the following areas that should be improved:

1. **Inconsistent and unevidenced benefits calculations:** The RPC raised in its IRN and its previous opinion that there is limited evidence to support the assumption that 90% of the lost sales value of energy drinks will be displaced to soft drinks. The RPC notes that this assumption does not affect the EANDCB as it is an indirect impact and accepts that the assumption will be revisited during the post-implementation review. However, this assumption appears to have been used inconsistently in the IA. Considering the sales weighted price differential between energy drinks and soft drinks, the assumption implies that consumers would be substituting their current volume consumption of energy drinks with a significantly greater volume consumption of soft drinks. This assumption is inconsistent with the monetised benefit of calorie reduction, where it is assumed that 90% of consumers substitute energy drinks for soft drinks on a volume-for-volume basis. This inconsistency results in either the benefits to business of displacement or the benefits to society of reduced calorie intake being incorrect. The Department should therefore ensure consistency between its calculations.

   The analysis underpinning the wider benefits estimates appears to be flawed and there is very little evidence to support the rationale for intervention.

2. **Rationale and evidence of harm from caffeine:** In its IRN and previous opinion, the RPC noted that the evidence presented to demonstrate a causal link between caffeine consumption and potential negative health impacts was weak. The Department has now included a summary of the studies conducted in Norway and Sweden. However, this evidence alone does not provide enough evidence of a causal link. The Department states that "*the benefits of the policy to the individual lie primarily in the reduction of caffeine consumption*" (page 29) but can only support this claim with unsubstantiated assertions. The Department has also quoted statements such as "*energy drink consumers were two times more likely to have low physical well-being*" (page 91) (and has stated that this contributes to 57% of caffeine in 3 to 9-year olds diets and 87% in 10-17-year olds diets) without considering reverse-causality problems. The Department therefore should seek to substantially strengthen the evidence

underpinning its rationale for intervention, which could be done through monitoring the health impacts of the regulation and comparing its findings to the studies due to be released by Lithuania.

3. **Consideration of policy options**
   a. **Suitability of age opted for.** In its initial review, the RPC advised the Department to clarify why a ban, which prevents all consumption of energy drinks by under-16s, has been employed when the objective is to prevent excessive consumption. The Department then included a helpful table of policy options considered, but did not provide detail on the potential effectiveness of alternative options. Since the RPC's second review, the Department has given further explanation as to why certain policy options such as a more targeted intervention may not be appropriate. The Department has cited challenges with their implementation and enforcement, which would impact on efficacy. The IA could benefit however from a more extensive consideration of to which age cohorts the regulation should limit purchasing. The Department has considered bans for under-18s and under-16s, but does not consider other age groups. The evidence presented appears to demonstrate that a ban on under 16s or under 18s is disproportionate in meeting the Departments objectives. The Department states "*a single large can of energy drink can exceed 3mg of caffeine/kg of bodyweight for 11 to 12-year olds and under*" (page 8) but has neither considered a ban for under 12-year olds nor discussed the bodyweight and corresponding safe consumption levels of caffeine for 13-16 year olds.
   b. **Combination of policy options.** The RPC notes the Department did not consider further the impact of combining a public health campaign with its preferred measure in their analysis. The IA would benefit from a more overarching view in this area, with the inclusion of these potential interactions in the considered options section.

4. **Market inclusion:** The Department has stated that it has not quantified the costs to non-food stores or online retailers (paragraphs 224 and 291) due to insufficient data. It has acknowledged that some retailers, such as Boots, will fall into this category so there will be missing costs. The Department has uplifted the costs by 30% to address unmonetised costs (paragraph 292). The RPC accepts this approach given the difficulty the Department faced in quantifying this area. However, considering the potential size of the market that non-food stores and online retailers represent, the RPC would expect the

Department to conduct sensitivity analysis on the number of locations and groups included in administration, familiarisation and enforcement costs.

5. **Voluntary ban uptake calculations:** The Department uses information from the periods up to 2017, which as the Department states relates to the period prior to the 2018 voluntary ban on sales to under-16s. The Department acknowledges that if energy drink consumption has fallen as a result of the voluntary action, then the potential impacts and administration costs of the policy may also be overstated. The RPC considers it proportionate, given the assumed 59% location dependent uptake of voluntary action, for the Department to seek a more up to date source of information. In doing so, the IA would benefit from collecting consumption information on energy drinks through online retailers (paragraph 292) to include these in the calculations. If the Department is unable to do so, it could carry out additional scrutiny within sensitivity analysis or perhaps consider using comparable online products as a proxy.

6. **Unjustified exclusion of data sources:** The Department has found five data sets concerning energy drink usage in UK children between 2013/14 and 2017/18. One of these, the NDNS study, has not been included as it produced lower estimates than the others. The Department has noted it is not clear whether the NDNS would underestimate in any greater or lesser amount than known levels of underreporting (paragraph 62). Furthermore, the RPC notes that one of the other studies, the Health Behaviour in School-aged Children (HBSC) 2013/14 study, produced significantly higher estimates in two-thirds of the age groups covered than the other Studies. This consistently higher study has not been discounted. Considering there are only five studies, one of which is consistently high and one of which is consistently low, the RPC suggests using all the available evidence.

7. **Evidence from existing bans in other countries:** The RPC is pleased to see that the Department has sought clarification on the existing bans in Lithuania and Latvia (paragraphs 97-100). The Department has stated that the Lithuanian evaluation was intended to be published in the summer of 2019. Although there will be limitations, if this has been published, the IA would benefit from inclusion of the results from this evaluation. The RPC recommends that the findings of similar international interventions should be taken into account when considering a post-implementation review.

8. **Costs to businesses.** While there are several issues that affect the direct cost to businesses, the RPC recognises that their impacts on the EANDCB do not appear to be significant. The IA would however be improved by further development in these areas.
    a. **Challenge 25 ongoing costs:** The Department notes that most ID checks resulting from the policy will be on 16-25 year olds. However, the ongoing cost to business of checking ID is based on transaction data for 6-17 year olds. The Impact Assessment would benefit from seeking data representing transactions made by 16-25 year olds. Data for 6 to 17-year olds is unlikely to be a realistic estimate of the number of checks so it is likely that the costs to businesses of 'Challenge 25' are miscalculated. This underestimate of the costs of ID checking is also present in the vending-machine sub-option where the number of identification calculations use current sales to under 16s instead of those made to 16-25 year olds.
    b. **Labelling implementation plan:** The RPC commends the Department for stating "its intentions to issue clear guidance on shelf labelling to retailers in advance of the introduction of any regulations". The RPC however deems it proportionate, given the implications this measure has on manufacturers, to include a more in-depth guidance plan for scrutiny of its monetised and logistical impacts. The Department has correctly suggested this area should be considered in the post-implementation review.
    c. **Evidence for labour costs:** The RPC is pleased to note the Department has used the ONS Annual Survey of Hours and Earnings (ASHE) to estimate the value of location level costs using category 'Retail cashiers and check out operators. The Department has assumed the same hourly cost for independent shopkeepers and assumed a doubling of this hourly cost to estimate group level costs, an assumption it has recognised is unsupported (paragraph 251). The Department has assumed that bar staff and waiters will have the same hourly costs as 'Retail cashiers and check out operators'. The ASHE also contains data on categories which would be more suitable for each of these employment categories. The RPC would expect the Department to refine its use of the source data, prior to publication of the IA and use the most up to date data available.
    d. **Staff training costs:** The Department has used data from Nomis to estimate the number of employees in the sector and has acknowledged that its method would result in a possible underestimation of the number of employees in the sector. The RPC that the accuracy of this estimate is tested with sensitivity analysis, given that it affects costs to

businesses. Also, the unjustified assumption regarding the proportion of staff potentially serving should be investigated as some back of house staff will need training if they are commonly called to front of house in busy periods of work. This aspect may have an impact on training costs both in familiarisation costs and on-going costs.

9. **Interaction with other regulation**
   a. **Obesity strategy:** The Department states that "*This policy is not expected to significantly change the estimated benefits of other policies in scope*." (page 98) It does not however adequately consider how other policies will affect this regulation. For example, other policies in the obesity strategy may affect the sales of energy drinks. The RPC recommends that the Department should fully demonstrate the interaction between the obesity strategy polices and quantify expected impacts where possible.
   b. **Soft Drinks Industry Levy (SDIL):** Following concerns raised by the RPC, the Department has noted that the SDIL will affect, but not eliminate, the consumption of energy drinks containing sugar. While the assumptions on the effects of the SDIL used by the Department are currently proportionate, it should refine them once more evidence is available and should review them in the post-implementation review.

10. **Changing Classification:** The proposed regulation affects drinks currently covered by EU Food Information Regulation (Regulation (EU) No.1169/2011). This regulation excludes other products including, for example, those including the name 'tea' or 'coffee', or those where caffeine is added for flavouring. When the Food and Drug Administration (FDA) introduced measures to the energy drink market, manufacturers reclassified many products as 'dietary supplements' in order to avoid them being in scope. The IA would be improved by exploring the likelihood of products reclassifying to no longer be covered by (Regulation (EU) No. 1169/2011) as if this occurred, it could affect the estimated impacts of the policy.

11. **Government enforcement of the regulation.**
    a. **Training for trading standards officers (TSOs):** In order to calculate the training costs for enforcement officers the Department has multiplied the expected training time for one TSO by the number of single-tier and county councils (paragraph 326). Without further explanation this implies that one TSO will be trained per council area. This approach is

inconsistent with later explanations that up to three TSOs will be needed for any enforcement operation to ensure safeguarding, and that any non-compliance would need to be reviewed by a senior TSO. The Department could improve the IA by clarifying and revising this cost. It would also benefit from monetising the training costs for senior TSOs that review non-compliance.

b. **Proportion of prosecutions:** The Department has indicated in paragraph 343 that it is unsure what proportion of non-compliance cases would lead to prosecution. The IA could be improved upon by communicating with the Association of Trading Standards Officers, or other relevant organisations, to ascertain the proportion of cases of non-compliance with other age-related restrictions such as alcohol or tobacco that lead to prosecutions, which could be used as proxies.

12. **Clarity:** Throughout the IA the Department interchangeably uses the terms "child" and "adolescent". Early in the IA as these terms are used almost interchangeably and can be misleading to readers considering they have different definitions in the literary evidence. The Department has also interchangeably used "link", "correlation" and "association" to describe the relationship within literature between caffeine and negative health effects, which could impair the reader's understanding of the relationship between variables. Correlation implies a predictable relationship between two variables while "link" or "association" do not; the Department would benefit from having consistency in their usage.

    The RPC also recommends that the Department makes it clear when explaining benefits that the average energy drink can size is 0.37l as mentioned in paragraph 456, not the 500ml can that the Department uses to state most the negatives of excessive energy drink consumption. The IA would also benefit from being clearer and more concise in its structure.

Other Comments

The Department should also verify that all internal references are correct prior to publishing. In addition to this, the IA would benefit from avoiding referencing with multiple steps, to improve readability and maintain a chronological order within the document.

SaMBA

The RPC considers the SaMBA to be sufficient. The Department explains that impacts to businesses would not fall disproportionately on SMBs. The Department provides rationale as to why small and micro businesses cannot be exempt from the ban. The Department also considers possible mitigations such as ban implementation based on individual sectors and demographics, but it deemed such mitigations to be unviable for implementation due to the aims of preserving a level playing field. The Department identifies many other additional areas affecting small and micro businesses, which the RPC commends.

Departmental assessment

Classification	Qualifying regulatory provision
Equivalent annual net direct cost to business (EANDCB)	£12.3 million (initial estimate) £59.3 million (final estimate)
Business net present value	-£80.4 million
Overall net present value	£1,448.1 million

RPC assessment

Classification	Qualifying regulatory provision (IN)
EANDCB – RPC validated[3]	£59.3 million
Business Impact Target (BIT) Score	£296.5 million
Small and micro business assessment	Sufficient
RPC rating of initial submission	Not fit for purpose

Regulatory Policy Committee

One committee member did not participate in the scrutiny of this case to avoid a conflict of interest.

[3] For reporting purposes, the RPC validates EANDCB and BIT score figures to the nearest £100,000.