Scoping policy options for Scotland focusing on understanding and managing the environmental impact of single use e-cigarettes (Zero Waste Scotland)

To: All Chief Executives, Main Contacts and APSE Contacts in Scotland. For information only to England, Northern Ireland and Wales

1 Executive summary

Zero Waste Scotland released a summary report on the main findings of the environmental impact of single use e-cigarettes in June 2023 that was undertaken at the request of the Minister for Green Skills, Circular Economy & Biodiversity. This is a high-level review of the potential policy options. These options are looking to meet the following two objectives:

- Improve management of single use e-cigarettes, and, enhance the safe recycling of discarded products
- Reduce the disamenity and pollution impact of single use e-cigarettes

All of the data in this report are estimates from a range of sources. For the year ending January 2023, they estimate there were 543,000 users of e-cigarettes in Scotland (10.8% of the adult population) of which 51,000 were under 16 and 78,000 were under 18, with statistics on youth vaping showing it was now more common than cigarettes. Estimates show 67% of users were under 25. University of Glasgow's recent report suggests that rates among adolescents were 4% of 11-year-olds, 16% of 13-year-olds and 36% of 15-year-olds have tried an e-cigarette at least once in their lifetime.

Without any kind of intervention, they expect the continued growth of e-cigarettes uptake and uptake amongst teenagers. The report outlines a range of potential high level policy options to be considered by Ministers.

Click here to access the summary report and the technical report from the Zero Waste Scotland website.

2 Single-use e-cigarettes

There are a range of environmental issues with single-use e-cigarettes due to the way they are designed, manufactured and discarded with total emissions in 2022 estimated to be around 3,375 and 4,292 tonnes of CO_2e, high water use in manufacturing of between 18,761 and 23,877 m3 and around 10% of single use e-cigarettes littered. Due to this, many are considering introducing bans on sales and limiting their use.

Single-use e-cigarettes are not designed to be recharged or refilled, and the battery can not be replaced. The number of single-use e-cigarettes consumed in Scotland in the 12 months up to April 2023 was estimated to be around 21 to 26 million units. The rolling 12-month figures show that sales revenue for single-use e-cigarettes has more or less doubled between October 2022 and March 2023. This could rise to between 50 and 64 million units by 2027 without intervention.

There are a wide range of materials used in the casing, liquid and packaging of single-use e-cigarettes with different plastics, metals, synthetic fibres, batteries, LEDs, metallised film, cardboard box, silicon covers, liquids, flame retardants and additives used in their production.

Only 16 of the 150 vape producers and importers in the UK analysed by Material Focus are registered to fund the recycling of a tonnage equivalent to what they put on the market under the UK waste electrical (WEEE) and portable battery regulations.

Five different environmental issues were identified with the use of single-use e-cigarettes and the way they are discarded.

1. Wasteful use of resources

The average weight of a single-use e-cigarette was estimated at 32g with on average:

- 10.8g battery
- 9.5g plastic
- 6.5g steel
- 1g cotton wick
- 1g cellulose material and small amounts of critical metals

The lithium polymer batteries used in many of the popular single-use e-cigarette brands could be recharged up to 500 times if the product allowed for recharging.

2. The impact of their consumption in terms of embodied greenhouse gas emissions and energy use

The total emissions associated with single-use e-cigarettes in 2022 were estimated to be between 3,375 and 4,292 tonnes of CO_2e.

3. Littering of single-use e-cigarettes

4. The impact of improperly discarding single-use e-cigarettes so they are not capable of being recycled

5. Potential fire risks posed for waste managers

There were several other issues that accompany the manufacturing process including water use, the pollution of watercourses, pollutants contributing to worsening air quality and the effect on the habitat of primary materials extraction.

The data regarding the environmental impact of single-use e-cigarettes is limited at present, so they have prepared estimates on a range of different factors:

- Estimates of the weight of packaging and materials which are discarded as a result of single-use e-cigarettes of between 800 and 1,000 tonnes, and is set to increase to 1,900 to 2,500 tonnes by 2027 in the absence of any interventions.
- In terms of total emissions for single-use e-cigarettes, there are currently between 4,000 and 5,000 estimated tonnes of CO_2e per year.
- Estimated water consumption linked to materials used in single-use e-cigarettes consumed in Scotland in 2022 were 18,761m_3 to 23,877m_3 and are estimated to rise to 45,648m_3 to 58,098m_3.
- Based on estimated total consumption of between 20.6 and 26.3 million units, the amount of units littered in Scotland could be between 721,000 and 2,787,800.
- The cost of this litter is estimated to be between £0.85 and £6.61 million, rising to between £2.06 and £16.09 million in 2027; these estimates are conducted by weight on the lower end of the range or by count on the higher end of the range.

Several jurisdictions have introduced the ban on sales of their all or only flavoured e-cigarettes, or introduced various forms of tax. Germany is currently considering a ban and New Zealand announced they would be banning most disposable vapes and taking a range of actions on the placement of vape shops near schools. Australia's e-cigarettes will only be available in pharmacies and flavoured e-cigarettes will be banned. In the European Union, clauses in the proposed Batteries Regulations could lead to single-use e-cigarettes being prevented from being placed on the market as of the end of 2026.

3 Policy options

Nine potential policy options are to be considered by Ministers to address the environmental impacts of e-cigarettes:

1. Setting design criteria for e-cigarettes
2. Requiring that batteries can be removed and be replaced (potentially to all WEEE items)
3. A ban on the sale of SU-ecigs
4. Charging a deposit for SU-ecigs to be refunded on return for recycling
5. A tax linked to recycling performance
6. Changes in the WEEE Regulations relating to the scope of cost recovery, a separate WEEE category for e-cigarettes, costs of management of e-cigarettes and setting targets
7. A levy or charge on sales payable by the consumer
8. A ban on flavoured e-cigarettes
9. Tightening of enforcement of existing law in relation to underage sales

A combination of these policy options could have an increased impact.

4 APSE Comment

APSE encourages our members to engage with the report from Zero Waste Scotland on the environmental impact of single-use e-cigarettes. Without intervention, the cost of cleaning up and disposing of single-use e-cigarettes could rise significantly while local authorities are looking to make significant budget savings. Single-use e-cigarettes will be discussed at the upcoming Scotland Litter Managers Network on Tuesday 10th of October, to register to attend this meeting please click here

APSE supports exploring the different ways in which this could be mitigated through policy changes. The evidence illustrated in the detailed technical report makes a convincing case for why interventions are necessary, with a tonne of single-use e-cigarettes costing between £10,000 to £15,000 to recycle as well as the potential health and safety risks regarding increasing risk of fires in refuse collection vehicles.

Garry Lee,
Research and Coordination Officer
glee@apse.org.uk

Louise Melville,
Principal Advisor (Scotland)
lmelville@apse.org.uk

Sign up for APSE membership to enjoy a whole range of benefits

APSE member authorities have access to a range of membership resources to assist in delivering council services. This includes our regular advisory groups, specifically designed to bring together elected members, directors, managers and heads of service, together with trade union representatives to discuss service specific issues, innovation and new ways of delivering continuous improvement. The advisory groups are an excellent forum for sharing ideas and discussing topical service issues with colleagues from other councils throughout the UK.

Advisory groups are a free service included as part of your authority's membership of APSE and all end with an informal lunch to facilitate networking with peers in other councils. If you do not currently receive details about APSE advisory group meetings and would like to be added to our list of contacts for your service area please email enquiries@apse.org.uk.

Our national advisory groups include:-

- FM and Building cleaning
- Catering (School Meals)
- Cemeteries and Crematoria
- Cost of Providing/Cost of Living Network
- Highways and Street Lighting
- Housing, Construction and Building Maintenance
- Local Authority Commercialisation, Income and Trading Network
- Parks, Horticulture and Grounds Maintenance
- Recovery and Renewal
- Renewables and Climate Change
- Roads, highways and street lighting
- Sports and Leisure Management
- Vehicle Maintenance and Transport
- Waste Management, Refuse Collection and Street Cleansing

Visit www.apse.org.uk for more detail

Association for Public Service Excellence
3rd floor,
Trafford House,
Chester Road, Manchester M32 0RS.
telephone: 0161 772 1810
fax: 0161 772 1811
web: www.apse.org.uk

Carbon Literate Organisation Platinum

INVESTORS IN PEOPLE™
We invest in people Gold

NEW MUNICIPALISM
Delivering for local people and local economies