

Consultation stage impact assessment

Title: Restricting the appearance of vapes and heated tobacco products

Type of measure: Secondary Legislation

Stage: Consultation

Source of intervention: Domestic

Department or agency: Department of Health and Social Care

Other departments or agencies: N/A

IA number: N/A

RPC reference number: N/A

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Date: July 2026

Summary: Intervention and Options

Summary of impact assessment

This impact assessment (IA) considers restricting the appearance of heated tobacco devices and vapes.

It should be noted that due to evidence limitations, a significant proportion of the benefits of the proposed policy are not quantified or monetised in this analysis. Additionally, where products in scope are novel, this creates further challenges and uncertainties in assessing the potential scale of the benefits. For example, the long-term health harms of vaping products are still unknown.

As a result, we have not presented a Net Present Social Value (NPSV) as we do not think it would provide a fair reflection of the overall net impact on society from this policy.

This IA was completed in October 2025. Therefore, the data and evidence used in the IA reflects the best available at the time of completion. Following this consultation, we will update the IA as appropriate, including consideration of information we gather through responses and any new data and evidence made available since the IA was published.

What is the problem under consideration? Why is government action or intervention necessary?

Evidence suggests that, in the short to medium term, vaping is less harmful than smoking. However, while less harmful than smoking, vaping is not risk-free and data on longer-term health harms is still emerging. Because of this, children and adult non-smokers should never vape.

In recent years, there has been an increase in the use of vapes and awareness of heated tobacco products (HTP), particularly among young people. Both products carry health risks, with the aerosol in heated tobacco containing carcinogenic compounds.

Vape devices come in a variety of colours and designs, including emulating the appearance of other products, all of which can appeal to children. Heated tobacco devices are similar in appearance and function to vapes and it is expected that their design is also an important factor in people's decision to use the products. It is possible that the appeal of vapes and heated tobacco devices is increased by the fact that the device is highly visible, being clearly seen whilst in use, able to be shared between people, and can be left in areas visible to other people.

Regulatory action is needed to deliver this policy. If the Government does not take action, then addictive products that cause health harms will continue to be sold with appealing colours and artwork, which in the case of vapes, is attractive to young people and in the case of heated tobacco devices, could potentially encourage users to consume tobacco. Voluntary and non-regulatory action would not be sufficient to address this issue.

What are the policy objectives of the action or intervention and the intended effects?

The UK Government, as well as the devolved governments in Scotland, Wales and Northern Ireland are committed to our ambition for a smoke-free UK and tackling the rise in youth vaping. The aim to reduce youth vaping needs to be balanced against the objective to support adult smokers to quit, in which vaping can play a role.

The specific policy objectives related to placing restrictions on the appearance of vapes and heated tobacco devices are:

Objective 1: To reduce youth vaping and prevent future generations and non-smokers from nicotine addiction and reduce wider risk of harm from vaping by reducing the appeal and attractiveness of vaping products for children and young people.

Objective 2: To avoid unintended consequences on the availability, accessibility and effectiveness of vapes for adult smokers seeking to quit smoking. This will in part be achieved by ensuring that heated tobacco is not more appealing than vaping products which are less harmful than tobacco products.

Objective 3: To further reduce tobacco consumption in any form, including reducing the number of people using heated tobacco products by requiring heated tobacco devices to adhere to appearance requirements that limit the appeal of the device.

A key indicator of success will be whether uptake of these products, and prevalence amongst young people, decreases.

What policy options have been considered, including any alternatives to regulation? Please justify preferred option (further details in Evidence Base)

- **Option 1 ('Business as Usual'):** Current legislation for heated tobacco and vape devices would still apply.
- **Option 2:** Vape and HTP devices could be a choice of an opaque matt achromatic colour (black, white, grey), with no variation in shades, there would be a limited exemption for digital screens. There would be no limitations on branding for vapes or HTP devices. Vapes and HTP devices would also be prohibited from mimicking other products.
- **Option 3 (preferred):** Vape devices could be a choice of opaque matt achromatic colour (black, white, grey) with no variation in shades, there would be a limited exemption for digital screens. HTP devices would have to be a dissuasive colour, likely pantone 448C. Branding for both vape and HTP devices would restrict the branding and logos present on the device so that only a brand name is permitted. Vapes and HTP devices would also be prohibited from imitating other products.
- **Option 4:** Vape devices could only be one neutral colour and HTP devices would have to be a dissuasive colour, likely pantone 448C; there would be a limited exemption for digital screens. Branding for both vape and HTP devices would restrict the branding and logos present on the device so that only a brand name is permitted. Vapes and HTP devices would also be prohibited from imitating other products.

These options are assessed against the three objectives and the critical success factors in order to determine which option would be the preferred choice. The preferred option for vapes strikes a balance between removing appealing colours but allowing some consumer choice. For HTPs, we ensure devices are dissuasive and maintain a difference in appeal between HTPs and vapes. Restricting branding and logos allows brands to be identified but prevents using them to appeal to consumers.

Will the policy be reviewed? It will be reviewed. If applicable, set review date: TBC				
Is this measure likely to impact on international trade and investment?			Yes	
Are any of these organisations in scope?	Micro Yes	Small Yes	Medium Yes	Large Yes
What is the CO ₂ equivalent change in greenhouse gas emissions? (Million tonnes CO ₂ equivalent)		Traded: N/A	Non-traded: N/A	

I have read the Impact Assessment and I am satisfied that, given the available evidence, it represents a reasonable view of the likely costs, benefits and impact of the leading options.

Signed by the responsible Minister

Sharon Hodgson

Date:

18/06/2026

Summary: Analysis & Evidence

Policy Option 1

Full economic assessment'

Description key costs by 'main affected groups'

The costs of this option are zero, as this is the option that costs of all other options are compared against.

Key benefits by 'main affected groups'

The benefits of this option are zero, as this is the option that benefits of all other options are compared against.

Distributional impacts

N/A

Key assumptions/sensitivities/risks

Discount rate

3.5%

- Current legislation will remain in place for heated tobacco devices and vapes.
- There would continue to be no legislation restricting the appearance of heated tobacco devices and vapes in the UK.
- Heated tobacco prevalence remains constant as a proportion of the population able to purchase tobacco but as the population increases this means the estimated number of users also increases.
- Vape prevalence remains constant as a proportion of the population but as the population increases this means the estimated number of vapers also increases.

Description key costs by 'main affected groups'

The monetised costs are:

- Familiarisation costs (£2.8m)
- Enforcement (£0.1m)
- Lost profit for retailers, wholesalers and manufacturers (£328m). This does not include lost profit for heated tobacco manufacturers.

The non-monetised costs identified are:

- Redesign costs to manufacturers
- Loss of business for design, printing and manufacturing businesses
- Disposal of non-compliant products for retailers, wholesalers and manufacturers
- Health impacts to individuals of fewer people using vapes to quit smoking

Costs in Option 3 and Option 4 are expected to be at least as much as Option 2.

Key benefits by 'main affected groups'

The non-monetised benefits identified are:

- Health benefits
- Reduced health and social care costs
- Reduced litter
- Reduced fire costs
- Savings from reduced ongoing redesign costs
- Consumer surplus

Benefits in Option 3 and Option 4 are expected to be at least as much as Option 2.

Distributional impacts

Whilst we know smoking prevalence varies by several characteristics including socioeconomic background, house tenure and age, we have limited evidence to be able to analyse this for vaping and heated tobacco use. Evidence highlights there could be differences in business impacts across regions due to the distribution of vape retailers and wholesalers.

Key assumptions/sensitivities/risks

Discount rate

3.5%

The key risks identified are:

- Interactions with other policies. This has not been quantified due to lack of evidence.
- Uncertainty in forecasts of vape and heated tobacco prevalence. This has been tested in sensitivity analysis.

Evidence Base

Problem under consideration and rationale for intervention

Context

1. Tobacco is a uniquely harmful product. Tobacco smoking remains the leading cause of preventable death, illness and disability in the UK¹. It causes around 80,000 deaths^{2,3,4,5} each year in the UK and is responsible for about one in four cancer deaths in England⁶. In 2023, around 6 million people in the UK were still smoking, including 11.6% of adults in England (aged 18+), 12.6% in Wales, 13.3% in Northern Ireland and 13.5% in Scotland⁷. Most smokers want to quit. In 2023, 56% of smokers in Great Britain intended to quit, and 24% of smokers intended to quit within the next three months⁸.
2. Heated tobacco products first appeared on the UK market in 2016, and the use of these products is currently 0.4%⁹. However, awareness of these products is growing. In 2023, smokers' knowledge of "heat not burn" products was 36%, with 8.6% having ever tried them¹⁰. There are also concerns about the appeal of heated tobacco to young people. For example, 18-24-year-olds are four times more likely to have tried heated tobacco (4%) than those aged over 50 (0.9%)¹¹.
3. A survey analysis of data from the Eurobarometer survey (covering 27 EU member states and the UK between August – September 2020) reported slightly higher prevalence rates¹². Results revealed ever use of heated tobacco products in the UK was considerable at 6.5%, however current users (1.3%) and daily users (0.7%) remained lower. This study also found current use was also more common among younger people, and current and former smokers.
4. Evidence of rising interest and awareness of heated tobacco is concerning given that there is no safe level of tobacco consumption¹³, including from heated tobacco. Laboratory studies show evidence of toxicity from heated tobacco, and, like other forms of tobacco, the aerosol generated by heated tobacco devices contains carcinogenic (cancer causing) compounds¹⁴.
5. The Government is committed to making the UK smoke-free. Unlike vapes, and as stated in the independent report "The Khan review: making smoking obsolete"¹⁵, there is currently little evidence to conclude that heated tobacco products make a contribution to smoking cessation¹⁶. A recent systematic review has also found that more than two out of three users of heated tobacco are dual users, often using heated tobacco alongside conventional tobacco products such as cigarettes¹⁷. This

¹ Institute for Health Metrics and Evaluation. Global Burdens of Disease. [VizHub - GBD Compare](#)

² OHID. [Smoking Profiles: Smoking attributable mortality](#)

³ Scottish Public Health Observatory. [Tobacco use: smoking attributable deaths](#)

⁴ Northern Ireland Department of Health. 2025.

⁵ Public Health Wales. 2024. [Over 10 percent of deaths in Wales due to smoking](#)

⁶ NHS England. 2023. Statistics on Public Health, England 2021. Part 2: Smoking-related mortality - NHS England Digital

⁷ ONS. 2024. [Adult smoking habits in the UK - Office for National Statistics](#)

⁸ ONS. 2024. [Adult smoking habits in the UK - Office for National Statistics](#)

⁹ Smoking in England. 2025. [E Cigarettes Latest Trends - Graphs - Smoking in England](#) (April 2025)

¹⁰ Action on Smoking and Health. 2023. [Use-of-e-cigarettes-among-adults-in-Great-Britain-2023.pdf](#)

¹¹ Action on Smoking and Health. 2025. [Heated tobacco ads are everywhere – how are tobacco companies getting away with it? - ASH](#)

¹² Anthony A. Lavery, Constantine I. Vardavas, Filippou T. Filippidis, 2021. [Prevalence and reasons for use of Heated Tobacco Products \(HTP\) in Europe: an analysis of Eurobarometer data in 28 countries - ScienceDirect](#)

¹³ WHO. 2025. [Tobacco](#)

¹⁴ Committee on Toxicity. 2017. [Statement on the toxicological evaluation of novel heat-not-burn tobacco products](#)

¹⁵ Dr Javed Khan OBE. 2022. [The Khan review: making smoking obsolete - GOV.UK](#)

¹⁶ Tattan-Birch and others. 2022. [Heated tobacco products for smoking cessation and reducing smoking prevalence - Tattan-Birch, H - 2022 | Cochrane Library](#)

¹⁷ Scala and others. 2025. [Patterns of Use of Heated Tobacco Products: A Comprehensive Systematic Review - PubMed](#)

review also found that “prospective studies consistently show that, in real life, [heated tobacco products] are not effective smoking-cessation tools”.

6. Evidence suggests that, in the short to medium term, vaping is less harmful than smoking^{18,19}. There is also evidence that vaping can be an effective quit aid for adult smokers when combined with behavioural support²⁰. According to a Cochrane systematic review, smokers using vapes had increased quit rates in comparison to those using nicotine replacement therapy (NRT)²¹ and in a UK randomised control trial, smokers using vapes to quit tobacco were almost twice as likely to be smokefree after 12 months, compared to those using NRT, at a fraction of the cost²².
7. However, while less harmful than smoking, vaping is not risk-free and data on longer-term health harms is still emerging²³. It is for this reason that the Government’s advice on vaping is clear: if you smoke, you should switch to vaping. But if you don’t smoke, don’t vape, and children should never vape.
8. One of the health risks of nicotine-containing vapes is the nicotine content. Nicotine is a highly addictive drug²⁴. Withdrawal symptoms include cravings, irritability, anxiety, trouble concentrating and other mental and physical symptoms²⁵.
9. As outlined in the OHID 2022 evidence review²⁶, there is substantial evidence that using nicotine vaping products can result in symptoms of nicotine dependency. Whilst the review concluded pulse wave velocity, a blood pressure measurement, did seem to be affected by nicotine in vaping products, it reported that there is currently limited robust evidence concluding other health harms associated with nicotine vaping.
10. There are also some health risks associated with the other ingredients in vapes. For example, propylene glycol and glycerine (components of e-liquids) can produce toxic compounds²⁷. There is emerging evidence that suggests vaping is associated with a higher risk of developing respiratory illness²⁸, could present dangers from metals in the devices²⁹, and that nicotine impacts gastrointestinal disorders³⁰.
11. A recently conducted umbrella review investigating the short and long-term health effects of vaping on young people reported consistent associations between vaping and alcohol intake, asthma and other respiratory outcomes, and mental health outcomes³¹. It also found significant associations between vaping and lower total sperm counts in young men, dizziness, headaches, migraines and oral health harms, but this evidence largely derived from limited surveys or case series/reports.
12. Despite these potential health harms and the clear advice that children should not vape, youth vaping has become an issue of concern within the UK. Data gathered by NHS England in 2023 shows that 25% of 11-15 year olds had tried vaping and that the proportion of young people regularly vaping has more than doubled between 2018 and 2023³². ASH UK data for Great Britain shows a similar picture, although

¹⁸ OHID. 2022. [Nicotine vaping in England: 2022 evidence update](#).

¹⁹ Scottish Government. 2024. [Vaping- Health harms: evidence briefing](#).

²⁰ Hajek and others. 2019. [A Randomized Trial of E-Cigarettes versus Nicotine-Replacement Therapy](#) | *New England Journal of Medicine*

²¹ Lindson and others. 2025. [Electronic cigarettes for smoking cessation](#)

²² Hajek and others. 2019. [A Randomized Trial of E-Cigarettes versus Nicotine-Replacement Therapy](#)

²³ Scottish Government. 2024. [Vaping- Health harms: evidence briefing](#).

²⁴ NHS. [Vaping myths and the facts - Better Health - NHS](#) (accessed October 2025)

²⁵ NHS. [Managing nicotine withdrawal symptoms - Better Health - NHS](#) (accessed October 2025)

²⁶ OHID. 2022. [Nicotine vaping in England: 2022 evidence update](#).

²⁷ Komura and others. 2022. [Propylene glycol, a component of electronic cigarette liquid, damages epithelial cells in human small airways](#).

²⁸ Zavala-Arciniega and others. 2024. [Longitudinal associations between exclusive, dual and polytobacco use and respiratory illness among youth](#).

²⁹ Salazar and others. 2025. [Elevated Toxic Element Emissions from Popular Disposable E-Cigarettes: Sources, Life Cycle, and Health Risks](#) | *ACS Central Science*

³⁰ Wal and others. 2023. [An Updated Review of Nicotine in Gastrointestinal Diseases](#)

³¹ Golder and others. 2025. [Vaping and harm in young people: umbrella review](#) | *Tobacco Control*

³² NHS Digital. 2024. [Smoking, Drinking and Drug Use among Young People in England, 2023 - NHS England Digital](#)

rates are beginning to flatline in 2024 and 2025³³. According to ASH, 66% of current youth vapers in Great Britain in 2025 reported using a vape containing nicotine, with only 4% reporting that they use non-nicotine products³⁴.

13. Given the potential health risks and the challenges around tobacco and the growing youth usage of vapes in many countries, the World Health Organisation³⁵ has called on governments globally to strengthen their regulatory measures to reduce tobacco usage and to reduce the risk of nicotine addiction.
14. In response to these challenges, on 4 October 2023 the Department of Health and Social Care published a Command Paper followed by a UK-wide consultation on 12 October 2023 entitled 'Creating a smokefree generation and tackling youth vaping'³⁶. This was a four-nation consultation and the Government's response was published on 29 January 2024³⁷. This led to the introduction of the second Tobacco and Vapes Bill to Parliament, announced in the King's Speech on 16 July 2024. After the last General Election, the Government updated and introduced the Bill to Parliament in November 2024³⁸. The Act received Royal Assent on 29 April 2026 and includes powers to regulate tobacco and vaping products and aims to address both the issue of adult smoking and young people vaping.
15. The Government's aims to tackle youth vaping and the use of heated tobacco sits alongside several other measures we propose to introduce using powers within the Tobacco and Vapes Act. The upcoming consultation will address these areas collectively and, therefore, there are other IAs covering:
 - introducing new restrictions on the display of tobacco devices, vaping and nicotine products;
 - introducing new restrictions on the packaging of all tobacco products (excluding cigarettes and hand rolling tobacco), cigarette papers, herbal smoking products, tobacco related devices.
 - introducing new restrictions on the packaging of all vapes and nicotine products, including limits on flavour descriptions.
16. The Act also bans all non-nicotine vapes and nicotine products from being sold to under 18s, which is already in place for nicotine vapes. Additionally, it bans the advertising, promotion and sponsorship of vapes and nicotine products, mirroring restrictions on tobacco, as well as ending the sale of these products from vending machines.

Problem under consideration

17. Like vape packaging, vape devices (which will be referred to as a vape, or vapes) come in a variety of attractive colours and designs, including emulating the appearance of other products, all of which can appeal to children.
18. We know that branding and graphic design can appeal to children. In 2014, Sir Cyril Chantler undertook an independent review of standardised tobacco packaging and found that "branded packaging plays an important role in encouraging young people to smoke and in consolidating the habit irrespective of the intentions of the industry"³⁹.

³³ ASH. 2025. [Use-of-Vapes-Among-Young-People-in-Great-Britain-2025.pdf](#)

³⁴ ASH. 2025. [Use of vapes among young people in Great Britain](#).

³⁵ World Health Organisation. 2023. [Electronic cigarettes: call to action](#)

³⁶ DHSC. 2023. [Stopping the start: our new plan to create a smokefree generation - GOV.UK](#)

³⁷ DHSC. 2023. [Creating a smokefree generation and tackling youth vaping - GOV.UK](#)

³⁸ DHSC. 2024. [The Tobacco and Vapes Bill: What you need to know](#) – Department of Health and Social Care Media Centre

³⁹ Sir Cyril Chantler. 2014. [Chantler-Review](#)

19. The same is being seen in relation to vaping and nicotine products, and evidence indicates that this may have been a contributory factor to the recent rise in youth vaping. Evidence demonstrates that people aged 15 to 24, who have ever tried both cigarettes and e-cigarettes, were more likely to cite packaging and design features, amongst other factors, as important for choosing their brand of vape compared with those aged 55 years or older⁴⁰. Studies state that bright colours for disposable vape devices were designed to appeal to young audiences in the UK⁴¹, that brand imagery directly on vaping devices helps to target products at specific sub-groups⁴², and that 24% of 121 participants in a study of US college students shared their vape every day⁴³. Whilst the study of US college students had a small sample size, it shows the vape device itself can be handled and seen by multiple people. In particular, the US college student study supports our understanding that many people first start vaping by being given a vape from someone else, with 76% of first-time vapers aged 11-17 reporting this as their most common source⁴⁴.
20. The wide range of colourful products available on the market suggests that colour is an important persuading factor for consumers when considering whether to purchase a vape and deciding on what type of vape to choose. For example, Elf Bar vapes, one of the most popular vaping brands in the UK, come in a variety of colours⁴⁵, from vivid pinks and reds, to silvers, purples, and greens. Additionally, it appears that colours often will match flavours, with apple flavoured vapes being linked to green devices, for example⁴⁶.
21. Some vapes also resemble products that appeal to children, such as game devices^{47,48}. The “Lost Vape Ursa Pocket Pod Gaming Vape Kit”, for example, is available on several retailer websites and allows the user to play games such as raising a virtual pet and competing for high puff counts^{49,50}. We have also heard from teachers and parents that vapes are disguised to look like highlighters and other products, making it harder to identify and confiscate these products. For example, the “Enjoy Ultra 9000”⁵¹ looks like a water bottle and is available at several retailers^{52,53,54}. Vape businesses seem to be aware of these trends and the interest from young audiences, with vape wholesaler JM Wholesale Ltd advising “UK retailers should take note of the growing demand for highlighter vapes”⁵⁵. There is, therefore, a need to prohibit vapes from mimicking the design of other products to reduce youth appeal and use.
22. There have been efforts by the tobacco industry in recent years to advertise and promote heated tobacco as a better alternative to smoking⁵⁶. Popular brands of heated tobacco are IQOS which is owned by Philip Morris, Ploom which is owned by Japan Tobacco International, and glo which is owned by British American Tobacco.

⁴⁰ Lavery and others. 2016. [Design and marketing features influencing choice of e-cigarettes and tobacco in the EU](#).

⁴¹ Smith and others. 2023. [Youth's engagement and perceptions of disposable e-cigarettes: a UK focus group study - PMC](#)

⁴² Gomes and others. 2024. [The effect of branded versus standardized e-cigarette packaging and device designs: an experimental study of youth interest in vaping products - ScienceDirect](#)

⁴³ Seitz and others. 2022. [E-cigarette sharing behavior among college students: An exploratory study - PubMed](#)

⁴⁴ ASH. 2025. [Use of vapes \(e-cigarettes\) among young people in Great Britain - ASH](#)

⁴⁵ Vape Superstore. [Vape Kits | Best Vape Kit & E-Cig Deals UK – From £4.95](#) (Accessed August 2025)

⁴⁶ Vape Superstore. [Lost Mary BM600 Prefilled Pod Kit - 600 Puffs Rechargeable](#) (Accessed August 2025)

⁴⁷ MyLondon. 2025. [Warning to parents over new 'smart' vapes with built-in video games - MyLondon](#)

⁴⁸ Lost Vape. [URSA POCKET - Lost Vape](#) (Accessed August 2025)

⁴⁹ Lost Vape. [URSA POCKET - Lost Vape](#) (Accessed August 2025)

⁵⁰ Grey Haze. [Lost Vape Ursa Pocket Pod Kit | Grey Haze UK](#) (Accessed August 2025)

⁵¹ UK Vape World. [Enjoy Ultra 9000 Puff | 9K Bulk Buy All Flavours](#) (Accessed August 2025)

⁵² Vape Kit UK. [Enjoy Ultra 9000 Box of 10 \(Bulk Buy at £74.50\) – Vape Store UK | Online Vape Shop | Vape Store | Ecig UK](#) (Accessed August 2025)

⁵³ Vape Forest. [Enjoy Ultra 9000 Puffs | 10 for £83](#) (Accessed August 2025)

⁵⁴ Vape Mall Wholesale. [Enjoy Ultra 9000 Box Of 10 - £40.70 – Vape Mall Wholesale](#) (Accessed August 2025)

⁵⁵ JM Wholesale Limited. [Highlighter Vape: A Stealthy Trend for UK Retailers in 2025 – JM Wholesale Ltd](#) (Accessed August 2025)

⁵⁶ Philip Morris International. [PMI's smoke-free products | PMI - Philip Morris International](#) (Accessed August 2025)

Together, these three companies account for over 90% of the global HTP market share in 2023⁵⁷.

23. Given that heated tobacco is still a relatively new and a novel product, there is limited evidence on how the device appeals to people. However, heated tobacco devices are similar in appearance and function to vapes, and so the same considerations as described above would arguably apply. Indeed, it is appropriate for government to consider the appearance and appeal of heated tobacco devices, given our overall aim to create a smokefree UK and the need to protect people from the uniquely harmful nature of tobacco.
24. It is possible that the appeal of vapes and heated tobacco devices is increased by the fact that the device is highly visible, being clearly seen whilst in use, able to be shared between people, and can be left in areas visible to other people such as on tabletops. This is similar to the visibility of tobacco packaging and its role to promote the tobacco products that it contains, and thus tobacco packaging could be considered as proxy evidence in this area in terms of the impact of potential measures.

Rationale for intervention

Evidence to support the need for intervention

25. There is very little evidence regarding interventions that target the appearance of the vape or heated tobacco device itself. The UK will be amongst the first countries in the world to attempt this approach. In order to alleviate part of this evidence gap, we are in the process of commissioning survey-based research via the National Institute for Health and Care Research to determine the impact the appearance of the device has on young people's interest in trying the vape, this should be available in time to inform the drafting of regulations.
26. A recent study⁵⁸ by UCL found that a greater proportion of participants reported "no interest in trying" the white standardised vapes compared to branded vapes. They reported that "standardising the colour and branding of disposable vaping devices [to white] reduces young people's interest in trying them". Whilst single use vapes are now banned in the UK, many devices currently on the market are extremely close in appearance and design to the disposable vapes which were considered by this study. Another study⁵⁹ found that "the colours of devices preferentially appealed to different sexes: for example, females were more interested in trying devices with pink and pastel colours than males. These findings are highly consistent with the tobacco control literature demonstrating that designs can be used to target subgroups of smokers by attaching attributes related to stereotypical gender".
27. As mentioned in the *international context* section, Australia has introduced requirements for a vape to be matt white, however these measures came into force in October 2024 and as such it is not possible to evaluate the effectiveness of the device appearance measure at this time.
28. Evidence on tobacco packaging can be used as a proxy for both vape appearance and heated tobacco device appearance. Evidence for standardised packaging of tobacco products suggests that it improves the effectiveness of health warnings, reduces attractiveness to young people and reduces smoking uptake in children⁶⁰.

⁵⁷ Expose Tobacco. 2025. [Understanding Heated Tobacco Products HTPs.pdf](#)

⁵⁸ Tattan-Birch and others. 2025. [Impact of standardising the colour and branding of vape devices on product appeal among young people: a randomised experiment in England, Canada and the United States | Tobacco Control](#)

⁵⁹ Gomes and others. 2024. [The effect of branded versus standardized e-cigarette packaging and device designs: an experimental study of youth interest in vaping products - ScienceDirect](#)

⁶⁰ ASH. 2017. [Standardised tobacco packaging - ASH](#)

29. The Standardised Packaging of Tobacco Products Regulations 2015: post-implementation review⁶¹ found evidence that suggested prohibiting tobacco branding reduced the appeal of tobacco products to children, with young non-smokers and occasional smokers potentially affected the most. Evidence of compliance was also found to be high with evidence suggesting that standardised packs accounted for 96% of total volume sales in June 2017⁶².
30. As set out above, both vape and heated tobacco devices are visible in a similar way to tobacco packaging, and therefore this evidence, which suggests standardising colour and restricting branding reduced the appeal of tobacco packaging, also suggests that standardising colour and restricting the branding of vapes and heated tobacco devices would be likely to reduce their appeal.
31. However, it's important to note that the evidence and impacts for specific products may differ compared to cigarette packaging. For example, when examining the effect of standardised packaging and limited flavour descriptors of vape pods found standardised packaging reduced youth appeal but had minimal effect on adults' interest⁶³. Additionally, for heated tobacco, a pre-print study⁶⁴ found that overall interest in trying products was greater for standardised packaging with limited flavour names compared to branded packaging which they highlight aligns with similar studies investigating vape products, but contrasts findings for cigarette packaging.
32. Whilst impacts may differ, there is limited specific evidence on vapes and heated tobacco devices so we have used tobacco packaging evidence as a proxy to quantify the impact. However, we recognise there could be a risk it will not reflect what may happen in practice and therefore the analysis in this document could overstate the impacts of the policy.

Stakeholder support

33. There is strong stakeholder and public support for imposing stronger requirements to reduce the appeal of vaping products and nicotine products to children and young people. In October 2023, the Government launched a consultation on Creating a Smokefree Generation, which also demonstrated strong support for regulatory action⁶⁵. Responses to the consultation found that there was strong support for regulating the product appearance of vapes. Additionally, 64.3% of respondents thought options that would prohibit colouring on vape devices, amongst other changes, would be effective in reducing youth vaping. Major public health stakeholders such as the British Medical Association support prohibiting the use of imagery, colour, and branding on the vape device⁶⁶. Whilst the vaping industry has not shown explicit support for regulating the appearance of vapes, they have voiced support more generally for ensuring child-appealing products are removed from the market, the UK Vaping Industry Association (UKVIA) has said "*The industry does recognise that action should be taken to prevent youth appealing products from ever making it to the shelves*"⁶⁷. Likewise, the Independent British Vape Trade Association (IBVTA) has said "*The IBVTA looks forward to working positively and progressively with the Government to ensure that vaping becomes less accessible and desirable to children*"⁶⁸.

⁶¹ DHSC. 2022. [Post-Implementation Review of Tobacco Legislation](#)

⁶² Breton and others. 2018. [Cigarette brand diversity and price changes during the implementation of plain packaging in the United Kingdom - PMC](#)

⁶³ Ebdon and others. 2025. [The effect of standardised packaging and limited flavour descriptors of vape pods among adults and youth in Great Britain: a cross-sectional between-subjects experimental study - The Lancet Regional Health – Europe](#)

⁶⁴ Ebdon and others. 2025. [PsyArXiv Preprints | Examining the effect of standardised packaging and limited flavour descriptors on appeal and harm perceptions of heated tobacco products](#)

⁶⁵ DHSC. 2023. [Creating a smokefree generation and tackling youth vaping consultation: government response - GOV.UK](#)

⁶⁶ BMA. 2024. [bma-vape-report-v5.pdf](#)

⁶⁷ UKVIA. 2024. [UKVIA Responds to BMA Report on UK vape regulation - UKVIA](#)

⁶⁸ IBVTA. 2024. [IBVTA statement on the Tobacco & Vapes Bill – Independent British Vape Trade Association](#)

34. Respondents to the department's call for evidence on youth vaping in 2023⁶⁹ provided a broad range of reasons for why vapes are appealing to children, including the appeal of packaging and product appearance. Nearly half (48%) said that this included colours. Respondents also highlighted that vaping is seen as "cool" or "glamorous", which could be due to how the vaping device, and the act of vaping, appears to others viewing it.
35. Additionally, respondents to the call for evidence thought that the product and packaging of vapes often resembled popular sweet brands or highlighted the shape of the product looking like soft drink cans and toys. This was corroborated by the 2023 DHSC smokefree generation consultation⁷⁰.
36. The consultation did not ask questions on the appearance of heated tobacco devices, however it found that there was strong support for restricting access to heated tobacco products with 63.2% of respondents agreed with the smokefree generation policy, which explicitly included heated tobacco. Major public health stakeholders such as Action on Smoking and Health, support measures to stop the promotion of heated tobacco products⁷¹.

International context

37. The UK will be one of the first countries in the world to take action in this area, although we are aware that other countries are considering it. Currently only Australia requires that any vape or accessory "must be mainly matte white or matte grey, and feature no more than 3 matte colours or shades including the colour or shade of any text"⁷² with the aim of ensuring a plain appearance. Australia introduced these rules in October 2024. In the US, vapes must gain a pre-market trade authorisation in order to be legally sold. The FDA evaluates whether a product meets minimum standards for public health protection⁷³ and the FDA will take action to end sales where they feel that a product is egregious in how its appearance appeals to children, for example if it imitates a product like a juice box⁷⁴.
38. As heated tobacco products are relatively new to the market, there has yet to be any international regulation which specifically targets device appearance. The UK will therefore be one of the first countries in the world to take action in this area. Some countries (such as Australia, Malta, and Norway) prohibit heated tobacco products, though such restrictions do not always include the device which may come without tobacco pre-inserted.
39. The UK is a member of the World Health Organisation Framework Convention on Tobacco Control (FCTC). Article 5.3 of the convention states: "In setting and implementing their public health policies with respect to tobacco control, Parties shall act to protect these policies from commercial and other vested interests of the tobacco industry in accordance with national law"⁷⁵.

Why is Government intervention required?

40. For all tobacco products and related devices, including heated tobacco, voluntary action by businesses is not sufficient to address the attractiveness of these products. While the industry associations say they recognise the action should be taken, product availability shows they won't do it alone. There is a fundamental and

⁶⁹ DHSC. 2023. [Youth vaping call for evidence analysis - GOV.UK](#)

⁷⁰ DHSC. 2023. [Creating a smokefree generation and tackling youth vaping consultation: government response - GOV.UK](#)

⁷¹ ASH. 2025. [Heated tobacco ads are everywhere – how are tobacco companies getting away with it? - ASH](#)

⁷² Australian Government. 2024. [Understanding requirements for unapproved therapeutic vaping devices and accessories in Australia | Therapeutic Goods Administration \(TGA\)](#)

⁷³ Federal Register. 2021. [Federal Register :: Premarket Tobacco Product Applications and Recordkeeping Requirements](#)

⁷⁴ Federal Trade Commission. 2018. [FTC, FDA Take Action Against Companies Marketing E-liquids That Resemble Children's Juice Boxes, Candies, and Cookies | Federal Trade Commission](#)

⁷⁵ FCTC. WHO. 2013. [who-fctc-article-5.3.pdf](#)

irreconcilable conflict between the tobacco industry's interests and public health policy interests, and voluntary action would conflict with the clear guidance of WHO on how governments should approach tobacco policy.

41. Voluntary action by businesses is not sufficient to address the colourful marketing and promotion of vapes. Whilst some members of the vaping industry do self-regulate to avoid appeal to children, this is not indicative of the vaping industry as a whole, which still maintains a market where brightly coloured and appealing vapes are readily available⁷⁶. This failure of self-regulation has occurred despite overwhelming negative media coverage of youth vaping and high-profile concerns from public bodies, there is therefore no reason to assume guidance or reliance on voluntary action would have any impact on any area of vape regulation, including devices. It is therefore appropriate for the Government to take action and legislate to reduce the appeal of vapes to children.
42. The UK's Public Health Responsibility Deal (2011–2015)⁷⁷ demonstrates the limitations of relying on voluntary action to protect public health. While companies signed pledges to reformulate products, provide calorie information, and reduce harmful ingredients, many commitments were superficial, inconsistently applied, or designed to avoid meaningful change. There was no enforcement mechanism to hold businesses accountable. This failure illustrates that commercial interests often conflict with public health goals, as profit-driven industries have little incentive to make changes that might reduce sales⁷⁸.
43. Communications campaigns can have some impact. For example, in February 2025, DHSC launched a nation-wide campaign to reduce the appeal of vaping amongst children and young people. However, whilst public health campaigns can raise awareness of the health harms of both vapes and heated tobacco products and inform consumers; this alone is not sufficient to change behaviour. The new Religious, Sex and Health Education (RSHE) curriculum mandates education on the risk of vaping and nicotine⁷⁹. Whilst this will have some effect on vape knowledge, we have heard from young people themselves that, despite a large proportion viewing vapes as being more or equally as harmful to health as smoking cigarettes⁸⁰, vapes are perceived as glamorous⁸¹ and many are peer pressured in to vaping. This would suggest that perception of health harms is not a sufficient deterrent for young people when they perceive something as glamorous or cool, so reliance solely on educational campaigns would be ineffective. Communications campaigns should be used in tandem with other forms of action to help ensure successful implementation.
44. Further government action is required to deliver the government's ambition for smoke-free UK and as set out in its manifesto and health mission⁸², the government has committed to ban vaping and nicotine products from being deliberately branded to appeal to children. This is a key part of stopping the next generation from becoming addicted to nicotine. Likewise, taking action to reduce the appeal of heated tobacco is essential to creating a smoke-free UK and reducing pressures on the NHS and economy.
45. Regulatory action is needed to deliver this ambition. If the Government does not take action, then addictive products that cause health harms will continue to be sold with

⁷⁶ [Vape Kits - Starter, Pod & Sub-Ohm Kits From £3 | Vape Superstore](#) - example of a retailer where a wide variety of colours and designs are available

⁷⁷ DHSC. 2011. [Public health responsibility deal](#) - GOV.UK

⁷⁸ Durand and others. 2015. [An evaluation of the Public Health Responsibility Deal: Informants' experiences and views of the development, implementation and achievements of a pledge-based, public-private partnership to improve population health in England](#) - ScienceDirect

⁷⁹ UK Parliament. 2023. [Written questions and answers - Written questions, answers and statements](#) - UK Parliament

⁸⁰ ASH. 2025. [Use of vapes \(e-cigarettes\) among young people in Great Britain](#) - ASH

⁸¹ DHSC. 2023. [Youth vaping call for evidence analysis](#) - GOV.UK

⁸² Labour. 2024. [My plan for change](#) – The Labour Party

appealing colours and artwork, which in the case of vapes, is attractive to young people, and in the case of heated tobacco devices, could potentially encourage users to consume tobacco. This is in direct conflict with public health messaging.

Rationale and evidence to justify the level of analysis used in the IA (proportionality approach)

46. The evidence base for the influence and impact of device design on vaping and heated tobacco products is limited compared to evidence for packaging, and in particular, packaging of cigarettes and hand rolling tobacco. Where it is not possible to use evidence for devices, the assumptions made for tobacco packaging have been used as a proxy, and any potential differences have been noted.
47. HTPs are currently not as popular as vapes or tobacco products, and the evidence base is even more limited in comparison to both vapes and tobacco products. Where it is not possible to use evidence for HTPs, the assumptions made for the tobacco market have been used as a proxy, and any potential differences have been noted.
48. Due to the limited evidence base, we have had to make assumptions in our analysis to provide monetised cost estimates. Where assumptions have been made, they are clearly outlined in the impact assessment and where they have been identified as key assumptions, they have been tested in sensitivity analysis.
49. Limitations in the evidence also meant it was not always possible to explore all aspects of the proposed policy explicitly in the analysis. This includes device emulation and a partial exemption for screens. Where possible they have been considered in development of the non-monetised impacts.
50. Given the limited evidence base in some areas, we have not been able to identify all differences in impacts between different short-listed options. It has been clearly outlined where impacts between different options differ.
51. Several of the assumptions have not been tested with industry at this stage. The UK Government is committed to upholding Article 5(3) of the FCTC which requires FCTC members to protect public health policy from the vested interests of the tobacco industry. Whilst some vaping organisations have taken steps to remove Tobacco Industry influence this is not the case across the industry as a whole and it can be difficult to verify where stakeholders are free from Tobacco Industry influence unless this is stated and proven outright. This is particularly the case with industry partners involved in the production and sale of more novel products. Due to this consideration, wide engagement outside of an open government consultation can be difficult. To test the assumptions, we have provided thorough quality assurance and sensitivity analysis to provide a robustness check and show their influence on the quantified costs and benefits.
52. We will aim to collect additional data for the Final Stage IA through consultation and further research.
53. The appraisal period used in this IA is 10 years. We have used the default time horizon as suggested by HMT Green Book⁸³ as we do not think there is rationale for extending the appraisal period as the long-term impacts of products in scope are unknown. In addition, some estimates are based on projected consumption. Forecasting these figures beyond a 10-year appraisal period would likely decrease the robustness of the estimates. We expect the majority of the non-monetised benefits to arise within the appraisal period, however we are uncertain on when the health gains to individuals may arise and therefore they could also arise outside of the appraisal period.

⁸³ HMT. 2022. The Green Book: appraisal and evaluation in central government - GOV.UK

54. We have assumed the appraisal period for this policy will be from 2027 to 2036. This is illustrative and assumes the policy will be implemented in 2027. In practice this may not be the case. In addition, there is likely to be an implementation period, this has not been included in the modelling as it will be consulted on during consultation.
55. For this IA we are using a 2024 price base year and a 2027 present value base year. The interpretation of these figures throughout the IA is '*if this measure was introduced in 2027, the costs and figures in 2024 prices would be this much*'.
56. As outlined in the HMT Green Book, a discount rate of 3.5% per year has been used for all costs and benefits.
57. Due to evidence limitations, a significant proportion of the benefits of the policy are not quantified or monetised in this analysis. Additionally, where products in scope are novel, this creates further challenges and uncertainties in assessing the potential scale of the benefits. For example, the long-term health harms of vaping products are still unknown.
58. As a result, we do not think the presentation of a Net Present Social Value (NPSV) would provide a fair reflection of the overall net impact on society from this policy.

Interactions

59. As explained in paragraph 15, the Government's aims to tackle youth vaping and the use of heated tobacco sits alongside several other measures we propose to introduce using powers within the Tobacco and Vapes Act and there are other IAs covering these other measures.
60. This IA considers the costs and benefits of the policy in isolation. However, we recognise that other policies implemented through secondary legislation as part of the Tobacco and Vapes Act are likely to interact with each other.
61. The policies will also likely interact with other external factors and any future tobacco and vaping interventions such as changes to smoking cessation services, evolving long term health evidence on vaping and other nicotine products, introduction of novel nicotine delivery products or potential changes in population behaviours or trends.
62. There is limited evidence on how different policies will interact with each other and external factors. How policies interact will also depend on the options taken forward to final IA stage following consultation.
63. Further IAs will be developed, that will consider if there is any new evidence available to quantify how the policies interact with each other. At this stage we have provided a qualitative assessment of how policies might interact.

Potential interactions

64. Future vaping and nicotine product-related policies will aim to reduce the number of young people and non-smokers that vape or consume nicotine products.
65. If there are multiple policies aiming to make vapes and nicotine products less appealing to young people, they should be seen as mutually reinforcing. They could be expected to have a larger impact on youth vaping and nicotine product use rates compared to implementing them in isolation, if implementing them together is assumed to have a larger impact on the appeal of vapes to young people.
66. Restrictions on the display of vapes and other nicotine products further reinforces these policies by limiting youth exposure to vaping products. By limiting visibility and access, these restrictions could reduce youth vaping further.

67. However, it is possible that the total impact on youth vaping rates is less than the sum of individual policies, as the policies will be targeting the same groups of people. For example, in the worst-case scenario the impact could be the estimated impact size of one policy, and any additional policies have no additional impact.
68. Due to these potential interactions, there may be overlap between the costs and benefits identified creating a risk of double counting. Some cost estimates across the options are unlikely to be independent and therefore should not be added together. If the full impacts of each policy were aggregated, the total costs and benefits could be overstated. For example, familiarisation costs have been calculated separately for each policy, but if measures are implemented simultaneously, businesses subject to multiple policies may face a lower overall burden than the sum of the individual costs, for instance if guidance is combined.
69. Benefits have not been monetised in the IAs, so there is not the same risk of double counting of quantified benefits. However, for the non-monetised benefits considered, it is important to note that they should not be assessed in isolation. Many of these benefits may arise from multiple policies and may apply to overlapping populations. As a result, the benefits of individual policies cannot be combined.

Unintended consequences

70. A possible unintended consequence of vaping restrictions is that it could shift harm perceptions of vaping products, leading to individuals switching or trying more harmful products. It could also reduce the number of smokers willing to use vapes for smoking cessation.
71. To further mitigate similar unintended consequences, the Tobacco and Vapes Act will bring forward restrictions on more harmful products, notably including age of sale restrictions for tobacco products. The tobacco policies in the act are intended to reduce the proportion of people that tobacco can be sold to. We would expect these policies to at least partially mitigate any potential unintended consequences that might see an increase in people trying tobacco products.

Description of options considered

Policy objectives

72. The UK Government, as well as the devolved governments in Scotland, Wales and Northern Ireland, have a duty to protect and improve the health of their citizens. Specifically, they are committed to our ambition for a smoke-free UK and tackling the rise in youth vaping. The aims to reduce youth vaping needs to be balanced against the objective to support adult smokers to quit, in which vaping can play a role.
73. The specific policy objectives related to placing restrictions on the appearance of vapes and heated tobacco devices are:
- **Objective 1:** To reduce youth vaping and prevent future generations and non-smokers from nicotine addiction and reduce wider risk of harm from vaping by reducing the appeal and attractiveness of vaping products for children and young people.
 - **Objective 2:** To avoid unintended consequences on the availability, accessibility and effectiveness of vapes for adult smokers seeking to quit smoking. This will in part be achieved by ensuring that heated tobacco is not more appealing than vaping products which are less harmful than tobacco products.

- **Objective 3:** To further reduce tobacco consumption in any form, including reducing the number of people using heated tobacco products by requiring heated tobacco devices to adhere to appearance requirements that limit the appeal of the device.
74. These objectives are achievable, as demonstrated by the effectiveness of previous interventions targeted at tobacco control. The *Monitoring and Evaluation of preferred option* section goes into further detail on how the preferred option would be monitored to ensure it met the objectives and what timescale that would be measured against.
75. These objectives align with wider HMG objectives:
- The Government's manifesto commitment to 'create a smoke-free generation' and 'stop the next generation from being hooked on nicotine'. We also expect these objectives to contribute to the wider government commitments to 'build a National Health Service fit for the future', 'support economic growth' and 'reduce waste'.
 - These objectives also align with the ambitions outlined in the government's 10 Year Health Plan for England, to "halve the gap in healthy life expectancy between the richest and the poorest regions, while increasing it for everyone, and to raise the healthiest generation of children ever". Many of the described health harms associated with the products in scope contribute to the gap in healthy life expectancy, and preventing the initiation and use of these products by children will contribute to this goal.
 - The public health objectives within the government's Health Mission to 'support people to stay healthier for longer', 'shorten the time people spend in ill health' and 'shift the health system away from a focus on treatment to one focused on prevention'. By reducing the use of tobacco and vapes we are aiming to prevent long term health conditions which will improve overall population health in the UK.
 - The objective within the Growth Mission to make 'improvements to economic activity as a result of ill health'. Many of the described health harms associated with the products in scope carry substantial economic harms driven by potential reductions in economic activity as a result of long-term health conditions. Preventing the initiation and use of these products aims to improve associated economic inactivity.
76. Other indicators for success include the critical success factors which are:
- Strategic fit – the timing and content are complementary to other regulations subsequent to the Tobacco and Vapes Act, as well as other strategic government aims such as the 10-Year Health Plan for England.
 - Potential value for money – the correct balance between indicators such as individual and population level health gains, environmental gains, productivity gains, cost savings to government and individuals, and risks such as: cost to businesses, net business profit loss, deliverability risks and benefit realisation risks.
 - Capacity, capability and achievability amongst manufacturers who need to deliver this policy in the required time and enforcement agencies who will be required to implement necessary measures to enforce the changes in the allocated time and with the allocated resources.

77. Additional metrics that can be used to assess whether the objectives have been achieved are outlined in the monitoring and evaluation section of this impact assessment - for example, monitoring vaping and smoking prevalence.

Policy options

78. The policy options were selected by assessing a long-list of options against a range of factors, such as, products in scope, geography, size of businesses, how to deliver change, and implementation.
79. The policy options considered in this IA are:
- **Option 1:** Business as usual.
 - **Option 2:** Vape and HTP devices could be a choice of matt achromatic colour (black, white, grey), with a limited exemption for digital screens that only display device status information. There would be no limitations on branding for vapes or HTP devices. Vapes and HTP devices would also be prohibited from imitating other products.
 - **Option 3 (preferred option):** Vape devices could be a choice of matt achromatic colour (black, white, grey) and HTP devices would have to be a dissuasive colour, likely pantone 448C, with a limited exemption for both products for digital screens that only display device status information. In terms of branding for both vape and HTP devices, only a name of the product would be permitted with a set font, colour, text size of the brand name in designated space with no colour or logos. Vapes and HTP devices would also be prohibited from imitating other products.
 - **Option 4:** Vape devices could only be one matt neutral colour and HTP devices would have to be a dissuasive colour, likely pantone 448C, with a limited exemption for both products for digital screens that only display device status information. In terms of branding for both vape and HTP devices, only a name of the product would be permitted with a set font, colour, text size of the brand name in designated space with no colour or logos. Vapes and HTP devices would also be prohibited from imitating other products.
80. Other options considered but discounted included voluntary schemes or guidance, including other nicotine and tobacco related devices, and more limited design restrictions such as just restricting imagery on vapes. All options considered but not taken through to the short-list options did not meet the policy objectives and other indicators of success outlined above.

Option 1: 'Business as usual'

81. The business as usual constitutes the baseline against which changes to heated tobacco and vape devices are assessed.
82. In the absence of implementing this policy, current legislation for heated tobacco and vape devices would still apply. We would expect the existing policies to remain in place.
- Currently nicotine vape product requirements are regulated by the Tobacco and Related Products Regulations 2016 (TRPR)⁸⁴. TRPR does not make any provision with regards to the appearance of the vapes and so vapes would continue to be able to have appearances that could overtly appeal to children.

⁸⁴ Legislation.gov.uk. [The Tobacco and Related Products Regulations 2016](#)

- In England, Scotland, and Wales, non-nicotine vapes are regulated under the General Product Safety Regulations 2005 (GPSR). In Northern Ireland Non-nicotine vapes are regulated by Regulation (EU) 2023/988. The GPSR (and EU Regulation for NI) requires providers to ensure only safe products are placed on the market, together with any necessary warnings for safe use of the product.
- Heated tobacco is subject to certain requirements under current tobacco legislation. This includes a ban on advertising, sale to over 18's only, notification and packaging requirements. However, heated tobacco devices are not subject to most packaging and product presentation regulations such as standardised packaging.
- All vapes and heated tobacco devices containing nicotine are also subject to specific requirements under the Classification, Labelling and Packaging of Chemicals (Amendments to Secondary Legislation) Regulations 2015 as nicotine is considered a hazardous substance⁸⁵. This requires nicotine products to carry hazard warnings about the toxicity of nicotine. Devices containing nicotine are required to have a tactile warning to ensure people are alerted when they are handling a toxic product.

Baselines

83. The options considered cover the products in scope:
 - Vapes
 - Heated Tobacco Products
84. Where data is available, a baseline for prevalence and total spend have been estimated. Baselines consider only those aged 18 and over for the purpose of profit losses, as sales of nicotine vapes to those under 18 is currently illegal.

Vape baseline (including non-nicotine vapes)

85. For the purposes of this IA, we need to estimate the current and future size of the vape market for the appraisal period 2027-2036.
86. In the Tobacco and Vapes Bill IA⁸⁶, we estimated the vape market size using sales data from a Defra commissioned report by the consultancy Eunomia⁸⁷. This research was conducted in 2023 to develop the evidence base on the single-use / disposable vape market and its environmental impacts in the UK.
87. It was estimated that 360 million disposable vapes were placed on the market in the UK in 2023⁸⁸. This figure was then projected forward by Eunomia to show that 1 billion disposable vapes could be placed on the market by 2030. Based on the number of vapes on the market, we were then able to estimate the projected business profit from sales using the estimated price of a vape (£5.38 in 2024⁸⁹) and the profit margins of manufacturers, wholesalers and retailers outlined in DEFRA's single use vape ban IA⁹⁰.
88. However, DEFRA's single-use vape ban came into force on the 1st June 2025, which makes it illegal to offer to sell or supply single-use vapes, or to stock single-use

⁸⁵ HSE. [GB classification and labelling - HSE](#)

⁸⁶ DHSC. 2024. [Tobacco and Vapes Bill Impact Assessment](#).

⁸⁷ Eunomia. 2023. [Analysis of the Market for Vapes: Exploring the environmental impacts of single-use vapes](#).

⁸⁸ Material Focus. 2023. [Number of disposable single-use vapes thrown away have in a year quadrupled to 5 million per week](#).

⁸⁹ Defra research conducted in 2023 based on a sample (a compiled list of approximately 40 products that were deemed to be disposable vapes based on the definition given in paragraph 80) of products for sale from both online and in-store retailers, including vape stores, newsagents and supermarkets.

⁹⁰ DEFRA. 2024. [Ban on the sale and supply of disposable vapes in England](#).

vapes that you plan to sell or supply⁹¹. Based on this, we expect the future market to look different, with people who vape changing their behaviours by quitting, swapping to reusable vapes, or switching to other nicotine products. Therefore, we judged it no longer representative to use the existing baseline from the Tobacco and Vapes Bill IA. In addition, the baseline previously used was predominantly underpinned by assumptions based on the disposable vapes market, which following the ban may no longer apply.

89. At the time of drafting this IA, we could not identify data or forecasts on specific changes to the market as the ban had just come into force (June 2025). Therefore, our vape baseline has been based on existing data with additional assumptions from the DEFRA IA on how consumers might change their behaviours.
90. A recent study by UCL⁹² explored the disposable vape ban announcement and found that the recent increase in vaping prevalence in Great Britain has stalled and there has been a shift away from using disposable vapes, with people opting to use reusable vapes instead. However, this study was still only considering changes to vaping prevalence prior to the single-use vape ban coming into force. As a result, we did not consider it appropriate to rely solely on these findings to make assumptions about how the vape market might change following the single-use vape ban.

Updated methodology

91. The updated methodology to estimate the vape market uses a bottom-up approach with the following steps:
 - A. Estimate the total number of people vaping using population estimates and vape prevalence
 - B. Apply percentages for different behaviours that will switch to different products following the single-use vape ban
 - C. Estimate the yearly spend on vape per person
 - D. Multiply the total yearly vape spend by the total number of people vaping to get total vape sales

A. Estimate the total number of people vaping using population estimates and vape prevalence

Population estimates

92. The total number of people vaping has been estimated using ONS population projections⁹³. We have split the populations into two groups, youths (11–17) and adults (aged 18+) to identify different impacts by age. These projections also take into account population growth over time.
93. When producing the population estimates for, for example, profit loss, we should exclude the youth population from the analysis, given the purchase of nicotine vapes for those under 18 is illegal and hence the lost profit to consumers should not be considered.
94. However, for the purposes of understanding the impact on vaping prevalence and estimating the potential impact on reducing youth vaping, we should also consider the reduction in the youth vaping population.

Vape prevalence

⁹¹ DEFRA. 2025. Single-use vapes ban: information for businesses

⁹² Jackson and others. 2025. Changes in vaping trends since the announcement of an impending ban on disposable vapes: A population study in Great Britain. ⁹³ ONS. 2022. Population Projections.

⁹³ ONS. 2022. Population Projections.

95. The vaping prevalence applied for 11–15 year olds is based on data from NHS Digital's report Smoking, Drinking and Drug Use in England 2023⁹⁴, which estimates prevalence of 8.7% of 11–15-year-olds in 2023.
96. For adults the prevalence that has been applied is based on ONS data⁹⁵ on adult e-cigarette usage in Great Britain in 2023, which was estimated to be 9.8%, made up of daily users (5.9%) and occasional users (3.9%).
97. For the baseline we assume prevalence is constant across all years. Despite growth over recent years, we expect that this is likely to slow, due to measures such as the disposable vape ban. It would not seem feasible to apply previous growth rates used, based on the disposable vape market to the future market. The UCL study⁹⁶ also referenced in paragraph 90, found that prevalence has stalled following the announcement of the single-use vape ban.
98. It is possible that the market may still experience growth over time and the stalling of increases in prevalence is only temporary. This scenario is considered unlikely given planned future measures such as the vaping products duty⁹⁷ and other secondary legislation on vapes.
99. Based on the population estimates and the prevalence explained above, we have estimated the number of people vaping, before we assume anyone has changed their behaviour following the single-use vape ban.

Table 1: Number of people that vape before switching has been applied (millions)

	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
Number of adults vaping	5.53	5.57	5.62	5.66	5.70	5.74	5.78	5.82	5.85	5.88
Number of young people vaping	0.50	0.50	0.49	0.49	0.48	0.48	0.47	0.46	0.45	0.45
Total number of people vaping	6.04	6.07	6.11	6.15	6.18	6.22	6.25	6.28	6.30	6.33

B. Apply percentages for different behaviours that will switch to different products following the disposable vape ban

Switching behaviours

100. As discussed in paragraph 88, we would expect the market to look different in the future. We have adjusted the number of people who vape accounting for the number of people that would quit, move to alternative products or switch to reusables following the disposable vape ban. DEFRA estimate percentages of switching

⁹⁴ NHS England. 2024. Smoking, Drinking and Drug Use among Young People in England, 2023.

⁹⁵ ONS. 2024. E-cigarette use in Great Britain.

⁹⁶ Jackson and others. 2025. Changes in vaping trends following the announcement of an impending ban on disposable vapes: a population study in Great Britain.

⁹⁷ HMRC. 2025. Prepare for Vaping Products Duty and the Vaping Duty Stamps Scheme.

behaviour in the disposable vape ban IA⁹⁸. They make assumptions on behaviour based on disposable vape user smoking status outlined in Table 2 and Table 3. Table 2 is based on data from The Smoking Toolkit Study⁹⁹, identifying the smoking status of disposable vape users.

Table 2: Share of disposable vape users by smoking status

Disposable vape user category by smoking status	Proportion of disposable vape users
Never smokers	20%
Current smokers	49%
Recent ex-smokers	10%
Previous smokers	20%

- 101. Table 3 has then been derived using the proportion of disposable vape users by smoking status (Table 2) from DEFRA’s IA and making assumptions about users switching behaviour based on their smoking status. DEFRA assumed that following the single-use vape ban:
- 102. Never smokers will end up quitting vaping.
- 103. Long-term previous smokers are more likely to switch to reusables given they are likely to have been long term users of vapes.
- 104. For current smokers and recent ex-smokers DEFRA used data from ASH, around satisfaction levels for vapes compared with cigarettes, to make assumptions about their switching behaviour. ASH found that 52% of current smokers and 28% of ex-smokers are less satisfied with vapes compared with e-cigarettes. DEFRA applied these proportions to current smokers and ex-smokers and assumed they will not transition to disposable vapes following the ban.

⁹⁸ DEFRA. 2024. Ban on the sale and supply of disposable vapes in England.
⁹⁹ UCL. Smoking Toolkit Study. (Accessed August 2025)

Table 3: Share of disposable vape users by assumed switching behaviour

Disposable vape user category by smoking status	Switching behaviour assumption	Proportion of disposable vape users
Never smokers	Quit vaping	20%
Current smokers	Quit vaping	26%
	Transition to reusable vapes	24%
Recent ex-smokers	Quit vaping	3%
	Transition to reusable vapes	7%
Previous smokers	Transition to reusable vapes	20%
Total		100%

105. Taking into account the percentages outlined in Table 3, the total percentage of disposable vape users that will no longer vape is 49%. This is made up of 20% never smokers, 26% current smokers and 3% recent ex-smokers. Based on this, we have applied a 49% reduction to the total number of people that use disposable vapes.
106. As the switching rate is applied to disposable users, we have assumed, based on ASH 2024 data, that 30% of adults use disposable vapes¹⁰⁰ and 54% of young people use disposable vapes¹⁰¹. Our analysis assumes that the remaining proportion use reusable vapes, however this also includes respondents who stated they did not know which device type they used. The proportion of people that responded 'don't know' (8% for young people and 2% for adults) have been included in the reusables category, to avoid overestimating the number of people that leave the market following the single-use vape ban.
107. More recent data on the type of device used has been published by ASH^{102, 103}. This data shows that the proportion of individuals using disposable vapes has fallen. In 2025, 42% of young people use disposable vapes and 24% of adults use disposable vapes. Whilst the field work for the surveys was conducted before the disposable vape ban came into force, there may be some anticipatory switching effects included in the 2025 figures. To avoid capturing switching behaviours twice, we have used the 2024 figures in this analysis.
108. The total number of people vaping, adjusting for the disposable vape ban has then been outlined in Table 4.

¹⁰⁰ ASH. 2024. [Use of vapes \(e-cigarettes\) among adults in Great Britain.](#)

¹⁰¹ ASH. 2024. [Use of vapes \(e-cigarettes\) among young people in Great Britain.](#)

¹⁰² ASH. 2025. [Use of vapes \(e-cigarettes\) among young people in Great Britain - ASH](#)

¹⁰³ ASH. 2025. [Use of vapes \(e-cigarettes\) among adults in Great Britain - ASH](#)

Table 4: Number of people vaping following the disposable vape ban (millions)

	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
Number of adults vaping	4.72	4.75	4.79	4.83	4.86	4.90	4.93	4.96	4.99	5.02
Number of young people vaping	0.37	0.37	0.36	0.36	0.35	0.35	0.35	0.34	0.33	0.33
Total number of people vaping	5.09	5.12	5.15	5.19	5.22	5.25	5.27	5.30	5.32	5.35

109. However, in practice there may be differences in the switching behaviours of individuals in the market. We have therefore tested a scenario in sensitivity analysis, where 100% of disposable users switch to reusables, to represent the maximum number of people continuing to vape following the ban.

C. Estimate yearly spend on vapes per person

Vape expenditure

110. A recent paper by UCL¹⁰⁴ based on data from the Smoking Toolkit Study estimated weekly vape expenditure. The average weekly vape expenditure is shown in Table 5. These figures can be multiplied to estimate the average yearly expenditure and used to estimate total sales value of vapes.

Table 5: Average weekly spend on vapes (adjusted to 2024 prices)

Device Type	Average weekly expenditure
Reusable	£7.28
Disposable	£11.02

111. Based on these figures, the estimated average yearly spend on vapes is £378 for reusable and £573 for disposable vapes. This has been adjusted to be in 2024 prices using GDP deflators¹⁰⁵.
112. Other studies of vape expenditure, including a report by HMRC¹⁰⁶ conducted in 2023 stated that current vapers reported spending an average of £8.60 (£8.94 in 2024 prices) a week on vaping products. With disposable vape users spending £10.85 (£11.28 in 2024 prices), compared to reusable users spending £6.95 (£7.23 in 2024 prices) a week. This is similar to that estimated by UCL. Our assumptions are based on the UCL paper, as this uses more recent data and has a larger sample size.

¹⁰⁴ Jackson and others. 2025. [Changes in expenditure on vaping in the context of the rise of disposable vapes and impending regulatory changes: a population study in Great Britain, 2021-2025.](#)[pre-print]

¹⁰⁵ HMT. 2025. [GDP deflators at market prices and money GDP June 2025 \(Quarterly National Accounts\)](#)

¹⁰⁶ HMRC. 2023. [Understanding the vaping market.](#)

D. Multiply the total yearly vape spend by the total number of people vaping to get total vape sales

Total vape sales

113. Based on the assumptions outlined above we can estimate the total sales volume, of the vape market from 2027-2036. This is done by multiplying the total number of estimated people that vape (as in Table 4) by the average yearly spend (£378). The total sales value can be seen in Table 6.

Table 6: Total vape sales (£billion)

Year	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
Total spend	1.93	1.94	1.95	1.96	1.97	1.99	2.00	2.01	2.02	2.02

114. As outlined, we have estimated the market value using a prevalence / bottom-up approach. Previously we had estimated the market value using the number of products on the market, therefore we have also tested this approach in sensitivity analysis.
115. Given a high level of uncertainty on future vaping prevalence and switching behaviours following the disposable vape ban, there remains some uncertainty in the final estimates. We will review any updated data following the disposable vape ban for final IA stage.

Heated tobacco product (HTP) baseline

116. For the purposes of this IA, we need to estimate the current and future size of the heated tobacco market, for the appraisal period 2027-2036.
117. The methodology for the heated tobacco baseline uses a bottom-up approach with the following steps:
- A. Estimate the total number of people using HTPs
 - B. Estimate the number of devices and sticks consumed per year
 - C. Use the average cost of devices and sticks to estimate yearly spend on HTPs
 - D. Multiply yearly spend by the number of people using HTPs
118. Whilst our policies are not changing the design of heated tobacco sticks, because they are only consumed with the purchase of a device, an impact on device consumption may have a knock-on impact on stick consumption. We have therefore considered this market in our analysis.

A. Estimate number of people using HTPs

Population estimates

119. To estimate the number of users of HTP we have used the ONS population projections¹⁰⁷.
120. To account for the increasing age of sale of HTP under the new smoke-free generation policy, we have increased the age of adults included in our analysis by one year, with each appraisal year. For example, in 2027 adults aged 18+ were included, and in 2028 adults aged 19+.
121. Whilst we know children and young people under 18 consume HTPs, we have not included an impact on this age group in our analysis as these would be illegal

¹⁰⁷ ONS. 2025. [Zipped population projections data files, UK](#) - Office for National Statistics

consumption/sales. Likewise, as the age of sale policy is introduced from 2027, we have not included adults under the legal age of sale.

HTP prevalence

122. The Smoking Toolkit Study estimate current use of heated tobacco prevalence to be 0.4% in 2025¹⁰⁸. Assuming adult HTP prevalence remains constant over the appraisal period we estimate the following HTP prevalence over the appraisal period.

Table 7: Heated tobacco baseline, modelled number of users and prevalence

Year	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
Population projection, UK adults (millions)	55.6	55.1	54.7	54.2	53.7	53.2	52.6	52.1	51.5	50.9
HTP prevalence	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%
Number of adult HTP users (millions)	0.22	0.22	0.22	0.22	0.21	0.21	0.21	0.21	0.21	0.20

B. Estimate number of devices and sticks consumed per year

123. Due to data limitations, it is not possible to estimate the number of devices consumed per year per person. In the absence of any data or evidence on this we assume this is one device per person per year.
124. As a proxy, we assume HTP sticks are consumed at the same rate as cigarettes. In 2022, ONS estimated the average daily consumption in Great Britain to be 10.6 cigarettes¹⁰⁹, which we assume is reflective of the UK. Multiplying this by 365 days, we estimate 3,869 HTP sticks are consumed a year.

C. Use the average cost of devices and sticks to estimate yearly spend on HTPs

Price of HTP devices

125. The price of heated tobacco devices varies between product design and brand. In the absence of data on heated tobacco device prices we have reviewed product pricing from leading brands. On the website of the leading brands, we have included all devices listed and taken the average price of each of the devices. Based on this and outlined in Table 8, we assume heated tobacco devices cost £39.05 on average in 2025 prices.
126. Based on the assumption that each HTP user consumes 1 device per year, average yearly spend per person on devices is estimated to be £39.05.
127. Heated tobacco devices are often sold with a starter pack with heated tobacco sticks. However, for the purposes of this analysis we have not separated out this cost. Additionally, where multiple colour options were available for one device type, but the price was the same, we have only included it once in the table below.

¹⁰⁸ UCL. [Top Line Findings - Graphs - Smoking in England](#) (Accessed August 2025)

¹⁰⁹ ONS. 2024. [Adult smoking habits in the UK: average cigarette consumption methodology](#) - Office for National Statistics

128. In practice, this may be different to the price of heated tobacco devices from other retailers and excludes any promotion discounts. For example, the Ploom X Advanced device can be purchased for £7.00 from the retailer Sainsburys¹¹⁰. It may also be skewed by only including a selection of products from their manufacturer websites. However, in the absence of additional data we are unable to use alternatives to estimate the price of heated tobacco devices.
129. Multiplying this average price of a HTP device by HTP prevalence, and annual consumption per user, we estimate the retail value of HTP devices in the baseline to be around £8.7m in 2027. Adjusting this for GDP deflator we estimate this to be around £8.4m in 2024 prices.

Table 8: Heated tobacco device prices from manufacture websites (accessed July 2025, 2025 prices)

Brand	Devices/starter kits	Price	Average price of devices
IQOS ¹¹¹	ILUMA ONE	£29.00	£58.20
	ILUMA	£35.00	
	ILUMA i	£59.00	
	ILUMA PRIME	£79.00	
	ILUMA i PRIME	£89.00	
Ploom ¹¹²	X Advanced	£29.00	£29.00
NEAFS ¹¹³	TEO	£29.99	£29.99
Glo ¹¹⁴	HYPER Pro +	£29.00	£39.00
	Hyper pro	£49.00	
Average price across all devices			£39.05

Price of HTP sticks

130. The price of heated tobacco sticks varies between brand and the number of boxes sold together. In the absence of data on heated tobacco stick prices we have reviewed product pricing from leading manufacturers. Prices vary from £0.25 per stick to £0.35 per stick. Taking the midpoint, we estimate one stick to cost £0.30.
131. This price is in line with three major supermarkets in the UK, Tesco, Sainsburys and Asda. The lowest priced heated tobacco sticks are sold at £5.00 per 20 sticks, and the highest at £7.00 per 20 sticks. Taking the midpoint and dividing by 20 sticks this also equated to £0.30 per stick in 2025 prices.
132. Translating this to yearly spend, based on a consumption rate of 3,869 sticks per user per year, results in a yearly spend of £1,161 per person per year in 2025 prices.
133. In practice, this may be different to the price of heated tobacco sticks from other retailers and excludes any promotion discounts. It may also be skewed by only including a selection of products from a selection of supermarkets. However, in the absence of additional data we are unable to use alternatives to estimate the price of heated tobacco sticks.

¹¹⁰ Ploom X Advanced Starter Kit Black | Sainsbury's (accessed July 2025)

¹¹¹ IQOS. IQOS ILUMA Starter Kits (accessed July 2025)

¹¹² Ploom. Devices. (accessed July 2025)

¹¹³ Neafs. Heating devices. (accessed July 2025)

¹¹⁴ Glo. Devices. (accessed July 2025)

Table 9: Price of heated tobacco sticks pack of 20, 2025 prices

Supermarket	Cost range for pack of 20 Heated Tobacco Sticks	
	Low	High
Tesco ¹¹⁵	£5.00	£7.00
Sainsburys ¹¹⁶	£7.00	£7.00
Asda ¹¹⁷	£7.00	£7.00
Across all three	£5.00	£7.00

D. Multiply yearly spend by the number of people using HTPs

134. Multiplying the average price of a HTP device by HTP prevalence, and annual consumption per user, we estimate the retail value of HTP in the baseline to be around £267m in 2027. Adjusting for GDP deflators we estimate this to be around £259m.

Table 10: Total HTP spend (2024 prices, undiscounted)

Year	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
Total spend (£m)	259	256	254	252	250	247	245	242	240	237

Option 2, Option 3 and Option 4

Description of options

135. **Option 2:** Vape and HTP devices could be a choice of matt achromatic colour (black, white, grey) with a limited exemption for digital screens that only display device status information. There would be no limitations on branding for vapes or HTP devices. Vapes and HTP devices would also be prohibited from imitating other products.
136. **Option 3 (preferred option):** Vape devices could be a choice of matt achromatic colour (black, white, grey) and HTP devices would have to be a dissuasive colour, likely pantone 448C, with a limited exemption for both products for digital screens that only display device status information. In terms of branding for both vape and HTP devices, only a name of the product would be permitted with a set font, colour, text size of the brand name in designated space with no colour or logos. Vapes and HTP devices would also be prohibited from imitating other products.
137. **Option 4:** Vape devices could only be one matt neutral colour and HTP devices would have to be a dissuasive colour, likely pantone 448C, with a limited exemption for both products for digital screens that only display device status information. In terms of branding for both vape and HTP devices, only a name of the product would be permitted with a set font, colour, text size of the brand name in designated space

¹¹⁵ Tesco. 2025. [Heated Tobacco Sticks & Devices - Tesco Groceries](#)

¹¹⁶ Sainsbury's. 2025. [Heat not burn tobacco | Sainsbury's](#)

¹¹⁷ ASDA. 2025. <https://groceries.asda.com/search/heated%20tobacco>

with no colour or logos. Vapes and HTP devices would also be prohibited from imitating other products.

Potential impact size

Evidence of impact size

138. There is a lack of data on the potential impact of restricting device design on the use of vapes and heated tobacco products, therefore we have reviewed evidence and previous analysis from the standardised packaging of tobacco to use as a proxy.
139. The IA on standardised packaging of tobacco¹¹⁸ estimated that there would be a reduction of around 11% in the prevalence of ever smoking. Assuming a similar scale of impact for standardised design of heated tobacco and vape devices (an 11% reduction), ever vaping prevalence of 25% among 11- to 15-year-olds based on Smoking Drinking and Drug use among Young People Survey (SDD)¹¹⁹, could decrease to 22%. Whilst we don't have a specific figure of HTP ever use, using the prevalence rate of 0.4% reported by STS¹²⁰, and 11% reduction could reduce the prevalence rate of HTP to 0.36%.
140. Expert elicitation in the same IA suggested a 4.8% reduction in adult smoking prevalence over two years (2.4% annually). After accounting for other tobacco policies (e.g. changes to packaging warnings), the isolated impact of standardised packaging was adjusted to 3.8% over two years (1.9% annually). The expert survey outlined by Pechey and others¹²¹ asked respondents to state their expectations of change in prevalence two years after implementation.
141. The post implementation review of tobacco packaging¹²² showed reductions in both adult and youth prevalence, and a sustained increase in quit success rates. However, these trends reflect the combined impact of SPoT, TRPR and other tobacco control measures, making it challenging to isolate the effect of packaging alone.
142. In the first year, smoking prevalence fell by around 1.4 percentage points, and the average annual decline post-implementation was slightly higher than previous years (-4.8% vs -4% pre-implementation). In addition, a 2021 study reported a significant step reduction in the odds of being a smoker after May 2017 (odds ratio: 0.93).
143. For vape devices, a 2025 research paper¹²³ supports a potential reduction in the number of people being interested in trying a standardised [white] vape, compared to a branded [coloured] vape. Whilst this research offers insight into potential behaviour change, we have not used this paper to estimate impact size for vape devices regulations due to a few factors:
 - External validity: Whilst the results of the study are helpful to indicate potential impacts of standardisation on the appeal of vapes to young adults, we believe the results are not generalisable to a policy environment where standardised vapes are the only consumption option.
 - Vape data limitations: If we were able to use the results from the study to estimate the difference in uptake behaviour, we have limited evidence on

¹¹⁸ DHSC. 2015. [Standardised Packaging of Tobacco Products Regulations 2015](#).

¹¹⁹ NHS Digital. 2024. [Smoking Drinking and Drug Use among Young People in England](#).

¹²⁰ Smoking in England. 2025. [Top Line Findings - Graphs - Smoking in England](#)

¹²¹ Pechey and others. 2013. [Impact of plain packaging of tobacco products on smoking adults and children: an elicitation of international experts estimates](#).

¹²² OHID. 2022. [The Standardised Packaging of Tobacco Products Regulations 2015: post-implementation review - GOV.UK](#)

¹²³ Tattan-Birch and others. 2025. [Impact of standardising the colour and branding of vape devices on product appeal among young people: a randomised experiment in England, Canada and the United States](#)

uptake rates of vaping so it is challenging to estimate a cohort to apply the results to.

Impact size applied

144. In the absence of being able to identify evidence on the specific impact of devices on vaping and heated tobacco prevalence, we have used the tobacco packaging impact size as a proxy.
145. We assume half of the reduction occurs in the first year and half in the second, based on the available evidence. It would be unrealistic to assume no change followed by a sudden drop and while decreases may persist beyond two years we have not modelled further reductions due to lack of evidence. Given the uncertainty in this figure, we have tested the impact size in sensitivity analysis, to reflect a scenario with both higher and lower prevalence reductions.
146. The impact size of 1.9% is being used, instead of the 2.4% as similar to the tobacco regulations, there are also other vaping policies being implemented at the same time, such as the vaping product duty.
147. We have assumed in our modelling that the 1.9% drop would occur in the first and second year of the appraisal period. In reality there could be a transition period where non-standardised vapes purchased prior to the implementation date are still being used by individuals, as our working assumption is that vape and heated tobacco devices are replaced once per year.

Limitations

148. Whilst this remains the most appropriate quantitative analysis to use for potential impact size it should be noted that impacts may differ between products. It is important to note that the evidence and impacts for specific products may differ compared to cigarette packaging. For example, when examining the effect of standardised packaging and limited flavour descriptors of vape pods found standardised packaging reduced youth appeal but had minimal effect on adults' interest¹²⁴. Additionally, for heated tobacco a pre-print study¹²⁵ found that overall interest in trying products was greater for standardised packaging with limited flavour names compared to branded packaging which they highlight aligns with similar studies investigating vape products, but contrasts findings for cigarette packaging.
149. Whilst impacts may differ, there is limited specific evidence on vapes and heated tobacco devices so we have used tobacco packaging evidence as a proxy to quantify the impact. However, we recognise there could be a risk it will not reflect that what may happen in practice and therefore the analysis in this document could overstate the impacts of the policy.
150. We recognise that regulating vape and heated tobacco devices may not have the same impact on prevalence as standardised tobacco packaging had on adult smoking prevalence. However, as outlined in the strategic case, we believe it is reasonable to draw parallels between tobacco packaging and vape and heated tobacco devices as the device is highly visible, being clearly seen whilst in use, able to be shared between people, and can be left in areas visible to other people such as on tabletops. This is similar to the visibility of tobacco packaging and its role to promote the tobacco products that it contains, and thus tobacco packaging could be considered as proxy evidence in this area in terms of the impact of potential measures.

¹²⁴ Ebdon and others. 2025. [The effect of standardised packaging and limited flavour descriptors of vape pods among adults and youth in Great Britain: a cross-sectional between-subjects experimental study](#) - The Lancet Regional Health – Europe

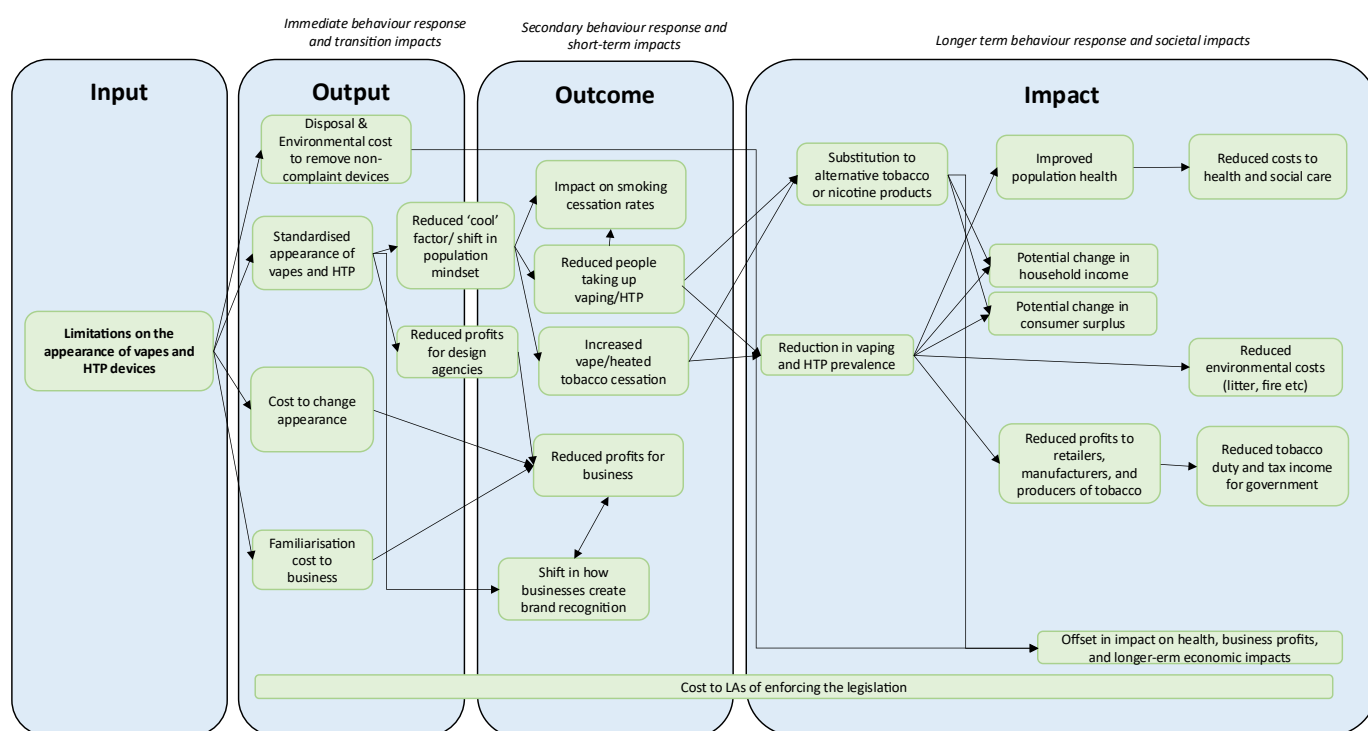
¹²⁵ Ebdon and others. 2025. [PsyArXiv Preprints | Examining the effect of standardised packaging and limited flavour descriptors on appeal and harm perceptions of heated tobacco products](#)

151. Additionally, for online sales the device is displayed at point of sale, much like the packaging would be in store and therefore could logically be influencing purchase decisions.
152. Between the different options in this IA, there is likely to be different potential impact sizes, with the most stringent policy option having the maximum impact size on prevalence. However, there is limited evidence on the potential impact size, therefore we are unable to model the impact size between different options. Where that is the case, the estimated cost or benefit are estimated and presented for all options together. Where it has been possible to provide different estimates for each option the estimate for each option is clearly set out. Through consultation we will look to seek additional evidence to support estimating the impact size or scale of different policy options.
153. In this IA we will conduct sensitivity analysis on key elements including the impact size on prevalence, which is likely to provide a range which may cover the different short list options. This approach is also being taken in the IA for standardised vape packaging. We have not considered potential overlap in impact from both policies as to not underestimate the impact on business, however it should be considered that this is a potential risk in our analysis.

Costs and benefits

154. The costs and benefits of these options were identified through the production of the logic model in Figure 1.

Figure 1: Logic model



155. The expected costs and benefits for each option are outlined in Table 11.
156. Whilst it has not been possible to quantitatively assess a difference between options, when discussing impacts in this IA we have indicated where costs and benefits would be expected to differ.

Table 11: Summary of economic costs and benefits to the UK, by option

Impact	Option 2	Option 3	Option 4
Costs	<ul style="list-style-type: none"> Familiarisation (£2.8m) Enforcement (£0.1m) Profit loss (£328m), not including profit loss from HTP manufactures Redesign costs to business Loss of business for design, printing and manufacturing businesses Disposal of non-compliant products Health impacts of fewer people using vapes to quit smoking 	Costs are expected to be at least as much as in Option 2.	Costs are expected to be at least as much as in Option 2 and 3.
Benefits	<ul style="list-style-type: none"> Health benefits Reduced health and social care costs Reduced litter Reduced fire costs Savings from reduced ongoing redesign costs Consumer surplus 	Benefits are expected to be at least as large as Option 2	Benefits are expected to be at least as large as Option 2 and 3
Transfers	<ul style="list-style-type: none"> Reduction in vaping duty Reduction in tobacco duty Reduction in VAT 	Transfers are expected to be at least as large as Option 2	Transfers are expected to be at least as large as Option 2 and 3

Non-monetised benefits

157. Due to level of evidence available on the harms associated with vapes and HTPs there are no monetised benefits. Non-monetised benefits have been provided and where possible relevant evidence has been drawn upon to provide a sense of scale.

Health benefits for individuals from reduced vaping and HTP use

158. A reduction in the use of vapes and HTPs could improve an individual's health.
159. The people who we expect to receive a health gain are estimated by taking the difference in prevalence between the policy options and the counterfactual. As stated in the 'potential impact size' section, we expect vape prevalence to fall by 176,000 people over the appraisal period, and heated tobacco prevalence to fall by 8,000 people.

160. To estimate the potential number of people needed to quit or to not take up these activities, we have produced breakeven analysis which can be found in paragraphs 291 to 302.

HTPs

161. Evidence of rising interest and awareness of heated tobacco is concerning given that there is no safe level of tobacco consumption¹²⁶, including from heated tobacco.
162. HTPs are relatively new products, resulting in limited evidence on their long-term effects. An independent systematic review and meta-analysis reviewed biomarkers of potential harm and found mixed results, with no clear indication of the relative risks or benefits of heated tobacco compared to cigarettes¹²⁷. However, data suggests that HTPs have the potential to be harmful and that potential benefits to smokers switching to heated tobacco products may be restricted to a small number of biomarkers. This study raised concerns about bias, as 32 of the 40 studies included had high risk of bias, and unclear bias on the remaining 8. Most studies in the meta-analysis were short with the longest being 12 months but most lasting 5 days or less. Also, only 1 study assessed the impact of HTPs to non-smokers.
163. Therefore, while it is possible that HTPs expose users to fewer toxins than cigarettes, HTPs contain many of the same harmful chemicals as combustible tobacco and are harmful to health.
164. In the Standardised Packaging for Tobacco Products IA¹²⁸, it was estimated the discounted number of life years saved for each young person who does not take up smoking is 1.0. The analysis calculating this figure has not been updated as part of this IA and therefore may over or underestimate the life years gained by someone not taking up smoking in the present year. Based on HMT's Green Book, this is equivalent to a value of £70,000. Previous analysis for pack inserts¹²⁹ estimates 0.74 Quality Adjusted Life Years (QALYs) are gained for each adult smoker that quits smoking cigarettes and hand-rolled tobacco. This is an updated figure from previous analysis for the Standardised Packaging of Tobacco IA estimated that the QALYs for each adult smoker that quits is 1.2.
165. Taking these values and assuming QALY gains could be similar for heated tobacco products, in absence of other evidence we have produced breakeven scenario analysis to find the number of young people required to not take up heated tobacco or the number of current users required to quit at the breakeven point.

Vaping

166. The latest evidence has found that vaping poses a small fraction of the risks of smoking¹³⁰, however there are still health risks associated with it.
167. Whilst there is limited evidence on the long-term health risks of using vapes, in theory if prevalence is reduced by reduced uptake, there are potential long term health gains from reduced uptake or increased quits.
168. In the Government of Canada regulatory impact analysis statement for the Tobacco and Vaping Products Act¹³¹ it was assumed that the mortality and morbidity risks associated with vaping are 20% of the mortality and morbidity impacts of cigarettes. This assumption was developed with members of an expert panel composed of five

¹²⁶ WHO. 2025. [Tobacco](#)

¹²⁷ Braznell and others. 2024. [Impact of heated tobacco products on biomarkers of potential harm and adverse events: a systematic review and meta-analysis | Tobacco Control](#)

¹²⁸ Legislation.gov.uk. 2015. [The Standardised Packaging of Tobacco Products Regulations 2015 - Impact Assessment](#)

¹²⁹ DHSC. 2023. [Impact assessment: tobacco pack inserts](#)

¹³⁰ OHID. 2022. [Nicotine vaping in England: 2022 evidence update - GOV.UK](#)

¹³¹ Based on DHSC. 2015. [The Standardised Packaging of Tobacco Products Regulations 2015 - Impact Assessment](#) and Government of Canada. 2021. [Canada Gazette, Part 1, Volume 155, Number 25: Order Amending Schedules 2 and 3 to the Tobacco and Vaping Products Act \(Flavours\)](#)

academics in tobacco control. Taking the evidence that each person who does not take up smoking gains 1.0 QALY, we could therefore estimate the number of life years gained for each young person that does not take up vaping to be 0.2, or £14,000 in monetary terms.

Reduction in health and social care costs

169. As outlined above, if prevalence of vaping and heated tobacco use falls there could be health gains for individuals. If so, it is possible that demand on health and social care service is reduced.
170. Based on preliminary NHS data for 2024/25, vaping is reported as the primary or secondary cause of around 280 hospital admissions per year¹³².
171. The unit cost per day of NHS hospital beds in 2020/21¹³³ ranged from £2,349 and £345. Assuming every person admitted to hospital with vaping the primary or secondary cause only spent 1 day in hospital, the cost of 280 hospital admission bed costs could range from £97,000 to £658,000 in 2020/21.
172. It should be noted that this cost is illustrative and highly uncertain. This cost could differ based on length of stay, prevalence rates, population rates, or other external factors.
173. Whilst there is limited evidence on the demands heated tobacco use and vaping puts on health and care services, we would expect these to extend across primary, secondary, and social care settings.

Reduced litter

174. With the reduction in the number of people using vapes and heated tobacco devices we would expect that there would be reduced litter from people disposing of vapes, heated tobacco devices, and heated tobacco sticks.
175. For vapes, whilst the single use vape ban has been put in place, there still could be some associated litter from reusable vapes such as the packaging, refill pods, e-liquid containers and coils.
176. Research by YouGov, commissioned by Material Focus⁴⁵ found that almost 5 million disposable vapes were either littered or thrown away in general waste every week. We do not have data on the number of reusable vapes that are littered.
177. Due to the lack of data on litter associated with reusable vapes, we are unable to monetise this impact. However, if reduced litter does arise as a result of these regulations, we would expect there to be environmental benefits.
178. For HTPs, there is limited data on the impacts and rates of litter of both devices and sticks, however there is a risk of litter.

Reduction in fire costs

179. If prevalence of vaping and heated tobacco devices falls, we can assume the number of related fires may also fall. This will reduce the cost of fires to the government.
180. Both heated tobacco devices and vapes contain batteries, often lithium-ion.
181. According to the National Fire Protection Association (NFPA)¹³⁴, the likelihood of lithium-ion batteries overheating, catching on fire, or causing explosions increases when damaged, improperly used, charged or stored. If disposed of in household waste or recycling it can cause fires in transport landfill or recyclers.

¹³² NHS England. 2024. [Hospital admissions for vaping-related disorders](#).

¹³³ UK Parliament. 2023. [Written questions and answers - Written questions, answers and statements - UK Parliament](#)

¹³⁴ NFPA. [Lithium-Ion Battery Safety](#). (Accessed August 2025)

182. In 2024, Material Focus¹³⁵ estimated that number of battery fires in the waste system had increased to over 1,200 in the past year. It is estimated that 19% of lithium batteries placed on the market were accounted for by single use vapes¹³⁶.
183. Whilst we can assume rechargeable vapes, and heated tobacco devices are not disposed of at the same rate as disposable vapes were, there could still be a fire risk if not disposed of correctly.
184. The unit cost of a lithium-ion fire can be estimated through the Home Office estimates of the average cost of all fires in 2020, £45,900¹³⁷.
185. In May 2025 the BBC¹³⁸ reported Essex Fire and Rescue have seen a rise in charger fires associated with reusable vapes, often because of unsafe charging.

Reduction in redesign costs

186. If businesses no longer need to make as many design decisions, or regularly update the appearance of their products due to this policy, this will reduce ongoing costs. If design of products is limited through this policy, it is also possible that the number of diversified products could be reduced, which could mean the number of diversified manufacturing processes are needed.
187. There is limited evidence on the cost and frequency of vape and heated tobacco device design and redesign so it is difficult to quantify this impact. We will review whether there is additional data at final impact assessment stage.
188. However, RAND analysis of Food labelling¹³⁹ estimates that a five-colour label is 15% more expensive than a three-colour label, which could indicate that standardisation of the colour of devices could create cost savings by reducing the complexity of colours. However, this is based on printing processes for a label which would likely be made out of different materials than a vape or heated tobacco device.

Consumer surplus

189. The design of vaping and heated tobacco products may contribute to the pleasure associated with the use of these products and users may be willing to pay a premium for the design, as was found with tobacco product packaging¹⁴⁰. Removal of desired features can be considered as a loss to the consumer, termed as a loss of 'consumer surplus'. However, due to the addictive nature of tobacco products, applying the concept of consumer surplus is more complex.
190. It is expected that rational consumers would consider a trade-off between the utility gained from use of products in scope and the health harms of smoking. Activities that make products less appealing or reduce the pleasure of use, such as restricting appearance, would alter the trade-off and a lower level of product use would become optimal. However, with addictive products such as those in scope of this legislation, from the first use, individuals can lose autonomy through addiction to tobacco or nicotine. The trade-off between the utility and harms of the use of heated tobacco and vape products may not be based on rational decisions but influenced by addiction.
191. Furthermore, for addictive goods, branding can act as a cue that can stimulate cravings as seen for tobacco packaging¹⁴¹. Removing this cue could help those that

¹³⁵ Material Focus. 2024. [1,200 battery fires in the waste system reported last year](#).

¹³⁶ Eunomia. 2023. [Analysis of the market for vapes: exploring the environmental impacts of single-use vapes](#). Based on Environment Agency. Agency. 2023. [UK Portable Batteries Data Summary for the 2022 Compliance Period. Final](#). and [Allied Market Research. 2021. Portable Battery Market Outlook-2030](#).

¹³⁷ Home Office. 2023. [Economic and social cost of fire](#).

¹³⁸ BBC. 2025. [Rechargeable vape fire warning ahead of disposable ban](#)

¹³⁹ RAND. 2008. [Assessing the impact of revisions to the EU horizontal food labelling legislation](#)

¹⁴⁰ Gendall and others. 2015. [Estimating the 'consumer surplus' for branded versus standardised tobacco packaging](#)

¹⁴¹ Chantler and others. 2014. [Standardised packaging of tobacco](#).

use vaping and heated tobacco products identify their true preferences for the consumption of these products.

192. Therefore, measuring the impact of restricting vape and heated tobacco product device design on consumer surplus is highly uncertain. We acknowledge that under 'rational choice' assumptions, the removal of branding may result in a loss of consumer surplus. However, it can also be argued that becoming free of addiction improves consumer surplus and that branding may have negative impacts on welfare as well as positive. Given the level of uncertainty of the direction and scale of impact of restricting design of vapes and HTP device on consumer surplus, it has not been quantified in this IA.

Monetised costs

193. Options 2, 3 and 4 are expected to have an impact on business, and through the IA process, including developing the logic model in Figure 1, a number of costs and stakeholders have been identified.
194. There are also some methodological points that are replicated throughout and apply to multiple cost areas such as a non-wage labour cost uplift.

Identified stakeholders

195. Based on the identified costs above, the following stakeholders were identified that may incur costs, and the number of these are described here:
- **Vape manufacturers:** Based on information provided by MHRA from vape product notification data, there are 323 manufacturers of vapes in the UK, and around 71 importers of vapes.
 - **Heated tobacco manufacturers:**
 - Nomis data reports there to be five small and micro tobacco manufacturers in the UK. We have included these five in the familiarisation cost, however we think it is unlikely that they are manufactures of HTPs and therefore don't incur any of the profit loss estimated.
 - We have assumed that loss in profits are mostly borne by transnational companies, not based in the UK. While some of the lost profits to HTP manufactures could be incurred by businesses in the UK, we have not been able to identify data that would allow us to estimate the proportion of lost profits for UK-based HTP manufactures.
 - **Vape and heated tobacco retailers:** Data we have identified suggests that in the UK there are:
 - 51,931 convenience stores based on the ACS Local Shop Report 2024¹⁴².
 - 5,831 supermarkets based on IGD Grocery Store numbers 2024¹⁴³.
 - 3,573 specialist vape stores based on intelligence from the Local Data Company sourced via The Independent¹⁴⁴.
 - 1,700 specialist tobacconists based on data from ONS NOMIS¹⁴⁵.

¹⁴² ACS. 2025. [The Local Shop Report | ACS](#) (estimates have been scaled up for the UK, using GB and UK population estimates, GB has been used as a proxy for mainland UK)

¹⁴³ IGD. 2024. [UK Grocery Store Numbers 2024](#).

¹⁴⁴ 2024. The Independent. [Number of independent vape shops across UK jumps again | The Independent](#)

¹⁴⁵ ONS Nomis. 2024. [UK Business Counts - enterprises by industry and employment size band - Nomis - Official Census and Labour Market Statistics](#)

- 12,852 pharmacies from NHA Business Services Authority¹⁴⁶, Scottish Government¹⁴⁷, Welsh Government¹⁴⁸, HSC Business Services Organisation¹⁴⁹.

We do not have data on the proportion of retailers that sell vapes and heated tobacco, so to reduce the risk of underestimating the impact, we assume that all do (apart from Pharmacies who we assume do not sell HTPs). Based on this, we estimate that there are 76,000 retailers in the UK that sell vapes and 63,000 that sell heated tobacco.

- **Vape and heated tobacco wholesalers:** We estimate the number of wholesalers in the UK to be 16,080 based on ONS NOMIS data¹⁵⁰ for wholesale of food, beverages, and tobacco. Due to lack of specific data for vape and heated tobacco wholesalers, it is assumed that this is also the number of vape and heated tobacco wholesalers in the UK.

Non-wage labour costs

196. Many of the costs identified are a time cost associated with complying with these options. In order to estimate the costs, the hourly wage of relevant persons for each cost are sourced from the Annual Survey of Hours and Earnings¹⁵¹.
197. These only represent the wage costs of the employees, and there are additional hourly costs associated with employment (such as national insurance contributions).
198. To account for this additional cost, the proportion of labour costs that are non-wage costs are estimated using the Index of Labour Costs per hour, seasonally adjusted¹⁵².
199. The labour costs per hour across the whole economy in 2020 Q3 was reported to be £22.80. The wage costs per hour across the whole economy in 2020 Q3 was reported to be £19.20. Based on this, the non-wage labour costs are calculated as 1 minus the wage costs per hour divided by the labour costs per hour, or 16%.

$$\text{Non - wage labour cost} = 1 - \frac{19.2}{22.8} = 16\%$$

200. To uplift hourly wage to account for this non-wage labour cost, wages are divided by 1 minus the non-wage labour cost of 16%, or multiplied by 1.19.

$$\text{Wage uplift} = \frac{1}{1 - 16\%} = 1.19$$

Familiarisation costs

201. To comply with regulations on devices, vape and heated tobacco device manufacturers, retailers and wholesalers would need to review guidance to become familiar with regulations. Time spent reviewing takes time away from other business activities and therefore, presents a cost to businesses.
202. The total cost of businesses to review the guidance is estimated by multiplying the number of businesses and employees that would need to review guidance by the time to review the guidance and the median hourly wage per employee.

¹⁴⁶ NHS Business Services Authority. [Pharmacy Openings and Closures - PHARMACY_OPENCLOSE_202506 - Open Data Portal](#) (June 2025)

¹⁴⁷ Scottish Government. [Pharmacy - Primary care services - gov.scot](#)

¹⁴⁸ Welsh Government. 2024. [Community pharmacy services: April 2023 to March 2024 | GOV.WALES](#)

¹⁴⁹ Business Services Organisation. 2025. [General Pharmaceutical Services and Prescribing Statistics - Business Services Organisation \(BSO\) Website](#)

¹⁵⁰ ONS Nomis. 2024. [UK Business Counts - enterprises by industry and employment size band - Nomis - Official Census and Labour Market Statistics](#)

¹⁵¹ ONS. 2024. [Earnings and hours worked, occupation by four-digit SOC: ASHE Table 14.](#)

¹⁵² ONS. 2020. [Index of Labour Costs per Hour, seasonally adjusted.](#)

203. We estimate that the time taken for a person to familiarise themselves with the legislation based on typical technical text reading speeds (75 words per minute)¹⁵³. Based on guidance that exists on tobacco packaging¹⁵⁴ we would expect the new guidance that employees have to review to be around 7,000 words long. We would expect it to take each person that needs to read the guidance around 1.5 hours.
204. It should be noted that the Department will work closely with businesses and representative bodies to publish comprehensive guidance to ensure that the requirements are easily understood by businesses.
205. We will also support Trading Standards, who are responsible for enforcing requirements imposed on tobacco and vaping products at a local level in England, Wales and Scotland, through training and guidance, to upskill them on the latest regulatory changes. In addition, in 2026 we will invest £30 million of new funding for enforcement agencies to support the implementation of the Tobacco and Vapes Act, including the recruitment of 80 new apprentices.

Manufacturers

206. We assume it will require 2 managers per manufacturer to read the guidance.
207. ONS' Annual Survey of Hours and Earnings (ASHE)¹⁵⁵ provides a median hourly wage for production managers and directors in manufacturing of £26.05. Adjusting this hourly wage by 19% to account for non-wage labour costs¹⁵⁶, the estimated hourly wage for a manager for a manufacturer is £30.93.
208. Table 12 shows the estimate of the one-off cost, to vape and HTP manufacturers in the UK to familiarise themselves with the new regulations.

Table 12: Familiarisation costs for vape and HTP manufacturers

Option	Cost
Option 2, 3 and 4	£37,000

Retailers

209. We have assumed that guidance would only be read by the shopkeeper and owners in each shop that sells vapes and heated tobacco products. We do not expect that they would need to pass the information to staff in the shop as the shopkeeper and owners are most likely to be responsible for ensuring that products in their stores are compliant with any new regulations.
210. ONS' ASHE survey provided a median hourly wage for shopkeepers and owners (retail and wholesale) of £15.36. Adjusting this hourly wage by 19% to account for non-wage labour costs¹⁵⁷, the estimated hourly wage for a shopkeeper and owner is £18.24.
211. For pharmacies, ASHE provides a median hourly wage for pharmacists of £25.70. Adjusting this hourly wage by 19% to account for non-wage labour costs, the estimated hourly wage for pharmacists is £30.52.

¹⁵³ EFTEC. 2013. Evaluating the cost savings to business from revised EA guidance – method paper. [Business Impact Target: appraisal of guidance - assessments for regulator-issued guidance](#)

¹⁵⁴ DHSC. 2021. [Tobacco packaging guidance: Guidance for retailers, manufacturers and distributors of tobacco products, enforcement agencies and the public on tobacco packaging in Great Britain](#)

¹⁵⁵ ONS. 2025. [Annual Survey of Hours and Earnings \(ASHE\)](#)

¹⁵⁶ ONS. 2020. [Index of Labour Costs per Hour, seasonally adjusted - Office for National Statistics](#)

¹⁵⁷ ONS. 2020. [Index of Labour Costs per Hour, seasonally adjusted - Office for National Statistics](#)

212. Table 13 shows the estimate of the one-off cost to vape and heated tobacco retailers in the UK to familiarise themselves with the new regulations on vape and heated tobacco devices.

Table 13: Familiarisation costs for vape and heated tobacco retailers

Option	Cost
Option 2, 3 and 4	£2,307,000

Wholesalers

213. As with retailers, we have assumed only one person within each vape and heated tobacco wholesaler would be required to read the guidance.
214. As mentioned in paragraph 210, ASHE provided a median hourly wage for shopkeepers and owners (retail and wholesale) of £15.36. Adjusting this wage by 19% to account for non-wage labour costs, the estimated hourly wage for a shop keeper or owner of a retailer that sells vapes is £18.24.
215. Table 14 shows the estimate of the one-off cost to vape wholesalers in the UK to familiarise themselves with the new regulations on vape and HTP devices.

Table 14: Familiarisation costs for vape and HTP wholesalers

Option	Cost
Option 2, 3 and 4	£439,000

Trading standards

216. Any restrictions on vape and HTP devices could require additional enforcement activity to ensure that non-compliant products do not remain on the market. We assume there are no ongoing enforcement costs as any change in activity would be included in their existing workload. A view on whether this will impose additional burdens will be assessed as part of the New Burdens Assessment.
217. To enforce devices regulations and ensure that non-compliant vape and HTP products do not remain on the market, it is expected Trading Standards will familiarise themselves with guidance.
218. Costs for Trading Standards to familiarise themselves with the guidance are estimated by multiplying the number of people needing to read the new guidance by the median wage and time taken to read it.
219. We have estimated that all trading standards officers will need to review guidance on devices. Based on the Chartered Trading Standards Institute Workforce Survey there were 197 trading standards services in the UK, and each service is estimated to have 9.4 FTE qualified trading standards officers in 2018/19¹⁵⁸. Therefore, it is estimated that there are 1,852 trading standards officers that are required to familiarise themselves with the guidance.
220. ONS' ASHE survey provided a median hourly wage for community and civil enforcement occupations of £16.27¹⁵⁹. Adjusting this wage by 19% to account for

¹⁵⁸ Chartered Trading Standards Institute. 2019. Workforce Survey 2018-2019.

¹⁵⁹ ONS. 2025. Annual Survey of Hours and Earnings (ASHE)

non-wage labour costs, the estimated hourly wage for a trading standards officer is £19.36¹⁶⁰.

221. Table 15 shows the estimated one-off costs for all Trading Standards officers in the UK to review devices guidance. We assume there are no ongoing enforcement costs as any change in activity would be included in the existing workload of Trading Standards.

Table 15: Familiarisation costs for Trading Standards

Option	Cost
Option 2, 3 and 4	£54,000

Total familiarisation costs

222. Table 16 shows the estimated total cost of familiarisation for Options 2, 3 and 4 alongside a breakdown by stakeholder.

Table 16: Total familiarisation costs

Stakeholder	Cost
Manufacturers	£37,000
Retailers	£2,307,000
Wholesalers	£439,000
Trading standards	£54,000
Total	£2,836,000

Lost profit

Vapes

223. As discussed in the *Potential impact size* section, standardising vapes is expected to reduce the number of people who vape. As a result, standardising vape devices is expected to reduce the profits for vape retailers, wholesalers and manufacturers, through reduced vape sales. This section provides estimates for the loss of profits based on a reduction in sales among all vape users. However, it should be noted that it is already illegal for those aged 17 and under to purchase vapes so they are excluded from the profit loss.
224. This section relies on the methodology from the vape baseline, outlined earlier in the impact assessment, which estimated the total sales value.
225. Future years costs are discounted at a rate of 3.5% in line with the Green Book¹⁶¹.
226. As discussed in paragraph 147 standardising vape devices is expected to reduce the number of people that vape by 1.9% in the first two years of the appraisal period.

¹⁶⁰ ONS. 2020. [Index of Labour Costs per Hour, seasonally adjusted](#) - Office for National Statistics

¹⁶¹ HMT. 2022. [The Green Book: appraisal and evaluation in central government](#).

This is equivalent to a cumulative reduction of 89,000 less people vaping in 2027 and 176,000 less for the remainder of the appraisal period.

227. Then the sales value associated with the reduction in number of people vaping is calculated by multiplying the reduction in number of people vaping by the yearly average spend on vapes. The total sales loss in 2027 is estimated to be £34m and for all other years of the appraisal period is £67m.
228. The profit margins are then applied to the total reduction in sales value, to calculate the total profit loss.

Vape retailers

229. In the Tobacco and Vapes Bill IA¹⁶² we assumed that vape retailer profit margins are 45%, which came from DEFRA's IA on disposable vapes¹⁶³. This was based on a stakeholder engagement process conducted by DEFRA in Spring 2024. These profit margins are based on disposable and reusable vapes including the different components which may have different profit margins. Profit margins may vary between these products.
230. Additional data identified includes a report by the University of Edinburgh¹⁶⁴. This report identified gross profit margins across all vaping products to be 37.1%, but they do vary across product types. For the purpose of this impact assessment, we use a profit margin of 45% to reduce the risk of underestimating the profit loss to retailers. This is also tested in sensitivity analysis using figures from the University of Edinburgh.
231. We apply a 45% profit margin to total reduction in sales value as outlined above.
232. Table 17 shows the estimated profit loss for vape retailers.

Table 17: Lost profit for vape retailers, 2024 prices, discounted

Option	Cost
Option 2, 3 and 4	£244m

Vape wholesalers

233. It will be expected that profit loss for vape retailers will be passed on to vape wholesalers through reduced sales.
234. To estimate the loss in profit to vape wholesalers we multiply the vape profit margin for wholesalers by the estimated total sales value reduction from adults that vape.
235. For the vape wholesaler profit margin we use the same assumption as in DEFRA's impact assessment on disposable vapes¹⁶⁵, wholesaler profit margins are used in this analysis. It is assumed that the profit loss for wholesalers is 12% also based on DEFRA stakeholder engagement.
236. Taking into account the profit of retailers, a 12% profit margin that wholesalers get, translates to a 6.6% profit margin on the total sales figure. Therefore, we apply a 6.6% profit margin to the calculated reduction in total sales value. To estimate the 6.6% we took price at the previous step of the supply chain (retail price) and subtracted the retailer profit to estimate the wholesale sales price. Applying the 12% profit margin we estimated the value of wholesale profit, and from this we could use

¹⁶² DHSC. 2024. [Tobacco and Vapes Bill Impact Assessment](#).

¹⁶³ DEFRA. 2024. [The Environmental Protection \(Single-use Vapes\) \(England\) Regulations 2024](#)

¹⁶⁴ Tunstall and others.2024. [Tobacco and vape profits: analysis of EPOS data from small retailers in the United Kingdom in 2019 and 2022](#).

¹⁶⁵ DEFRA. 2024. [The Environmental Protection \(Single-use Vapes\) \(England\) Regulations 2024](#)

retail price to estimate the wholesale profit percentage as share of the total sale figure.

237. Table 18 shows the estimated total profit loss for vape wholesalers.

Table 18: Lost profit for vape wholesalers, 2024 prices, discounted

Option	Cost
Option 2, 3 and 4	£36m

Vape manufacturers

238. As assumed in DEFRA's IA on disposable vapes, manufacturer profit margins are 15%, based on stakeholder engagement. We have not identified any additional data on manufacturer profit margins; therefore, we assume the same for this impact assessment.
239. Taking into account the profit of retailers and wholesalers, a 15% profit margin for manufacturers, translates to a 7.3% of the total sales value. Therefore, we apply a 7.3% profit margin to the calculated reduction in total sales value.
240. Table 19 shows the estimated total profit loss for vape manufacturers.

Table 19: Lost profit for vape manufacturers, 2024 prices, discounted

Option	Cost
Option 2, 3 and 4	£39m

HTP devices

241. It should be noted that in this section whilst we have estimated the profit loss to tobacco manufacturers, we have assumed that loss in profits are mostly borne by transnational tobacco companies, not based in the UK. Data from the ONS Annual Business Counts¹⁶⁶ provides data that there are five tobacco manufacturers in England in 2024. While some of the lost profits to tobacco manufacturers will be incurred by businesses in the UK, we have not been able to identify data that would allow us to estimate the proportion of lost profits for UK-based tobacco manufacturers. We have however included these five manufactures in familiarisation costs as these are estimated per businesses.
242. For tobacco retailers and wholesalers, they may not be able to offset the reduced profits from the sale of products in scope through the sale or distribution of alternative goods.
243. As discussed in the *Potential impact size* section, standardising heated tobacco devices is expected to reduce the number of people who use HTPs. As a result, standardising devices is expected to reduce the profits for HTP retailers, wholesalers and manufacturers, through reduced HTP sales. This section provides estimates for the loss of profits based on a reduction in sales among all HTP users. However, it should be noted that it is already illegal for those aged 17 and under to purchase HTPs so they are excluded from the profit loss.
244. This section relies on the methodology from the HTP baseline, outlined earlier in the IA, which estimated the total sales value.

¹⁶⁶ ONS Nomis. 2024. [UK Business Counts - enterprises by industry and employment size band](#) - Nomis - Official Census and Labour Market Statistics

245. Future years costs are discounted at a rate of 3.5% in line with the Green Book¹⁶⁷.
246. As discussed in paragraph 147, restricting the appearance of HTP devices is expected to reduce the number of people that use HTPs by 1.9% in the first two years of the appraisal period. This is equivalent to a cumulative reduction of around 4,000 less people using HTPs in 2027 and around 8,000 less for the remainder of the appraisal period.
247. The sales value associated with the reduction in number of people using HTPs is calculated by multiplying the reduction in number of people using HTPs by the yearly average spend on HTPs. The total sales loss in 2027 for devices is estimated to be £163,000 and for all other years of the appraisal period is £322,000 (2025 prices). For HTP sticks, this is estimated to be £4.9m in 2027 and £9.6m for all other years in the appraisal period (2025 prices).
248. The profit margins are then applied to the total reduction in sales value, to calculate the total profit loss.

Heated tobacco retailers

249. Based on evidence from ASH for the Public Bill Committee on Tobacco and Vapes, we assume the retail profit margin for heated tobacco sticks is 9.2%¹⁶⁸. As we do not have evidence on the specific profit margin for heated tobacco devices, we have assumed this profit margin is also appropriate for heated tobacco devices.
250. Table 20 shows the estimated profit loss for heated tobacco retailers.

Table 20: Lost profit for heated tobacco retailers, 2024 prices, discounted

Option	Products	Cost
Option 2, 3 and 4	Devices	£0.2m
Option 2, 3 and 4	Sticks	£6.9m

Heated tobacco wholesalers

251. In the absence of evidence specific to heated tobacco products, we have used cigarette wholesaler and manufacture profit margins as a proxy for heated tobacco wholesalers and manufacturer profit margins.
252. As assumed in the Tobacco and Vapes Bill IA¹⁶⁹, for cigarettes, wholesaler profit is assumed to be £0.16 per pack of cigarettes sold at retail in 2013 prices. Taking the retail price of a packet of cigarettes in 2013¹⁷⁰, we can estimate cigarette wholesaler profit margin to be 1.90%. As this is based on data from 2013, and there has since been changes to prices and tax rate of tobacco products, there is a risk this does not reflect current profit margins.
253. Table 21 shows the estimated total profit loss for heated tobacco wholesalers.

¹⁶⁷ HMT. 2022. *The Green Book: appraisal and evaluation in central government*.

¹⁶⁸ Public Bill Committee on Tobacco and Vapes. 2025. *Written evidence on the retail licensing and product registration powers in the Bill submitted by Action on Smoking and Health*.

¹⁶⁹ DHSC. 2024. *Tobacco and Vapes Bill: impact assessment*

¹⁷⁰ ONS. *RPI: Ave price - Cigarettes 20 king size filter - Office for National Statistics*

Table 21: Lost profit for heated tobacco wholesalers, 2024 prices, discounted

Option	Products	Cost
Option 2, 3 and 4	Devices	£48,000
Option 2, 3 and 4	Sticks	£1,435,000

Heated tobacco manufacturers

254. As assumed in DEFRA's IA¹⁷¹ for cigarettes, manufactures profit is assumed to be £0.22 per pack of cigarettes sold at retail in 2013 prices. Taking the retail price of a packet of cigarettes in 2013¹⁷², we can estimate cigarette wholesaler profit margin to be 2.84%. As this is based on data from 2013, and there has since been changes to prices and tax rate of tobacco products, there is a risk this does not reflect current profit margins.
255. Table 22 shows the estimated total profit loss for heated tobacco manufacturers.
256. Estimated profit loss for the tobacco manufacturing industry are assumed to be mostly borne by transnational companies, not based in the UK. Whilst we do know of five existing small and micro tobacco manufactures in England, we assume most heated tobacco being supplied in the UK comes from tobacco manufactures which are transnational companies and therefore out of scope for quantification of this IA. However, we have included estimates below for transparency.

Table 22: Lost profit for heated tobacco manufacturers, 2024 prices, discounted

Option	Products	Cost
Option 2, 3 and 4	Devices	£72,000
Option 2, 3 and 4	Sticks	£2,136,000

Total lost profit

257. Table 23 shows the estimated total lost profits for Options 2,3 and 4 alongside a breakdown by stakeholder.

¹⁷¹ DEFRA. 2024. The Environmental Protection (Single-use Vapes) (England) Regulations 2024

¹⁷² ONS. RPI: Ave price - Cigarettes 20 king size filter - Office for National Statistics

Table 23: Total lost profit, 2024 prices, discounted

Stakeholder	Cost
Vape retailers	£244m
Vape wholesalers	£36m
Vape manufacturers	£39m
Heated tobacco retailers	£7.2m
Heated tobacco wholesalers	£1.5m
Heated tobacco manufacturers	£2.2m
Total	£330m (£328m when excluding HTP manufacturers)

Non-monetised costs

Redesign costs

258. Regulations on vape and heated tobacco devices means that manufacturers would have to make changes to the design of their products.
259. Redesign costs to manufacturers are costs that would occur due to any transitions in manufacturing or design costs.
260. Transition costs could include redesigning/art working the product, colour dye/ink/pigments, retooling machinery, or purchasing new machinery. The exact cost to manufacturers would depend on how much they need to change their product design, and the number of products, known as Stock Keeping Units (SKUs), they have on the market.
261. Some of these transition costs could be mitigated over the appraisal period by reduced ongoing manufacturing costs. If design of products is limited, it is possible that the number of diversified products could be reduced, which could mean the number of diversified manufacturing processes that are needed could be reduced.
262. Also, the Standardised Packaging of Tobacco Products Regulations 2015 already require cigarettes to adhere to specific rules on their appearance, restricting them to plain white with a matt finish, therefore tobacco businesses are already familiar with legislation that requires their products to appear in certain colours. Additionally, vape manufacturers are already capable of producing white, black, and grey vapes - popular vape brands in the UK such as Elf Bar and Lost Mary have already produced products of those colours. Similarly, heated tobacco devices also already come in a variety of colours and so there should be minimal familiarisation required to adhere to appearance restrictions.
263. We will review whether there is additional data at final IA stage.
264. It is expected that this cost would differ between policy options. As the number of design changes required differ between options, it is plausible to assume Option 4 would incur the smallest redesign cost, followed by Option 2, and then Option 3. This

is assumed based on the number of colour and branding variations proposed in each option.

265. Whilst there is limited evidence to estimate this cost, we have outlined information below to provide a sense of scale.
266. Data from MHRA notification system suggests that there are over 500,000 notified vaping products for supply in the UK market. However, a lot of these products are unlikely to still be produced by manufacturers due to the removal of disposable vapes from the market, so the number of products that vape manufacturers would have to redesign and change the packaging for because of any regulations would be much lower than this. Additional data from ECigIntelligence shows that as of Q4 2024 there were a total of 13,063 products on the market¹⁷³. It could be the case that this number may be larger in practice due to the single-use vape ban potentially leading to increased reusable products on the market.
267. Based on MHRA data, we assume there are 394 vape manufactures in the UK. We assume each of these businesses would incur a one-off cost per vape product to redesign the device.
268. We assume, banning imitation of products would create a cost for manufacturers as multiple design and production changes would likely need to be made. However, there is limited information available for the quantity of emulated product SKUs, and how and where they are being consumed.
269. There is limited data on the number of SKUs for heated tobacco devices. As detailed in Table 8, when looking at the major HTP brand manufacturers in the UK, we have estimated there are at least 9 SKUs. This may not be exhaustive of all heated tobacco devices available in the UK and therefore could be an underestimate.
270. There is limited evidence on the cost of changing colour and text requirements on vape and heated tobacco devices, however there are some indicators of costs from tobacco packaging legislation¹⁷⁴ in the UK. Whilst standardised packaging design would involve different design, materials, and perhaps machinery/equipment it could provide an indication of costs. Additionally, there could be additional cost implications for features on products, for example lights, however we have limited evidence to assess this. We will review whether there is additional data at final IA stage.
271. The IA for the Tobacco and Related Products Regulations (TRPR) 2016¹⁷⁵ provide estimates for the costs to tobacco and vape manufacturers to add new warnings on the packaging of their product. RAND Europe¹⁷⁶ assessed the potential one-off costs faced by manufacturers to redesign packaging. It was estimated by a cigarette producer that including pictorial warnings on all cigarette packs would translate to a cost between €18,100-20,400 per SKU. For minor redesigns of packaging, evidence from the food industry suggested that a minor redesign cost would be approximately €2000-4000 and a major redesign cost between €7,000-9,000 per SKU.
272. Based on analysis from Canada^{177, 178}, it is assumed that manufacturers of heated tobacco products would face an additional re-tooling cost when standardising

¹⁷³ ECigIntelligence. 2025. [Non duplicated SKUs in the UK Vape Market](#).

¹⁷⁴ DHSC. 2015. [Standardised packaging of tobacco products impact assessment](#).

¹⁷⁵ DHSC. 2016. [The Tobacco and Related Products Regulations 2016. Impact Assessment](#).

¹⁷⁶ Tiessen and others. 2011. [Assessing the impacts of Revising the Tobacco Products Directive: Study to support a DG SANCO Impact Assessment](#).

¹⁷⁷ Government of Canada. 2023. [Canada Gazette, Part 2, Volume 157, Number 12: Regulations Amending the Tobacco Products Regulations \(Plain and Standardized Appearance\)](#)

¹⁷⁸ Government of Canada. 2019. [Canada Gazette, Part 2, Volume 153, Number 9: Tobacco Products Regulations \(Plain and Standardized Appearance\)](#)

packaging. We do not have enough evidence to know whether this is (a) applicable to device production, and (b) whether vape manufacturers would also face this cost.

Loss of business for design, printing and manufacturing businesses

273. Vape and heated tobacco manufacturers may outsource the design and manufacture of devices to specific businesses. As a result of the policy we would expect there to be reduced demand for vape and HTP device design, which may reduce the profits of these businesses. The full extent of the impact on these businesses will be dependent on their ability to diversify.
274. We are unable to identify data on the number of design businesses and therefore have not been able to quantify the impacts on these businesses. We will review whether there is additional data at final IA stage.

Costs of non-compliant devices

275. It is possible that retailers, wholesalers, and manufacturers may need to dispose of non-compliant vapes and HTPs. There may also be a risk that they may have to manufacture additional compliant products to replace non-complaint ones compared to production in the baseline. The extent to which these would be a cost would depend on the transition period that retailers have to sell any non-compliant products. It would also depend on the stock of vapes and HTPs that businesses hold in reserve.
276. Distributors could also face recycling costs as they have a responsibility to arrange recycling for all non-compliant stock should consumers dispose of them in store. Vapes and Heated Tobacco devices are electrical items, whether they are single-use or reuseable. This means they are covered by the Waste Electrical and Electronic Equipment (WEEE) Regulations. Distributors must offer a 'take back' service and must accept vapes, heated tobacco devices, and vape parts (such as used pods, coils or batteries) that customers return for recycling. The Office for Product Safety and Standards may take action if retailers do not have a way to safely recycle vapes, heated tobacco devices, and vape parts. Vapes should be disposed of in vape bins only and regularly collected for recycling¹⁷⁹.
277. There could also be environmental impact of excess stock disposal and additional manufacturing of compliant products. For example, vapes are made up of several materials, including plastics, metals, and batteries¹⁸⁰.
278. It should be noted that for the IA on standardised packaging of tobacco¹⁸¹, for which there was a 12-month period to sell any non-compliant stock, it was assumed there would not be any significant disposal costs for retailers. This was mainly due to retailers, particularly small retailers, not carrying large stocks of tobacco in reserve due to the high cost of tobacco products.
279. The duration of the implementation period will be tested at consultation stage.

Health impacts of fewer people using vapes to quit smoking

280. The potential impact section showed that adults that vape could be affected by a restriction on vape devices. This could include a proportion of adults that use vapes as a smoking quit aid. ASH reported¹⁸² that 2.7 million people in Britain used a vape as a quit aid in the last five years.
281. According to ONS data on adult vaping prevalence in Great Britain¹⁸³, 31.6% of adults that smoke cigarettes currently also vape, and 18.7% of ex-smokers. Data

¹⁷⁹ DEFRA. 2025. Single-use vapes ban: information for businesses - GOV.UK

¹⁸⁰ Centers for Disease Control and Prevention. E-Cigarette, or Vaping, Products Visual Dictionary

¹⁸¹ DHSC. 2015. Standardised packaging of Tobacco Products Regulations 2015.

¹⁸² ASH. 2024. Nearly 3 million people in Britain have quit smoking with a vape in the last 5 years.

¹⁸³ ONS. 2024. Adult smoking habits in the UK - Office for National Statistics

from ASH¹⁸⁴ on adult vaping in Great Britain shows that among current smokers 16% say the main reason they vape is to cut down on smoking, and among ex-smokers 26% say it is to help them quit smoking entirely.

282. Evidence has found that vaping poses a small fraction of the risks of smoking¹⁸⁵ and vapes can be an effective tool in supporting smoking cessation, especially when combined with expert support¹⁸⁶. Therefore, an unintended consequence of the regulations could be that fewer adults use vapes as smoking cessation tools and hence continue to smoke.
283. There would be costs to individuals if they continue to smoke. This includes health costs, such as, increased risk of heart disease, stroke and heart failure¹⁸⁷.
284. However, due to limited data and evidence it has not been possible to estimate the potential number of individuals that would no longer quit smoking or return to smoking as a result of device restrictions.

Reduction in duty revenue

Vaping products duty

285. At Autumn budget 2024, the Government confirmed Vaping Products Duty would be introduced from 1 October 2026. The duty will be a flat rate of £2.20 per 10ml of vaping liquid, applied to all vaping products regardless of nicotine products. Given that we expect standardising vape devices to reduce the prevalence and hence consumption of vape products, this would likely have a knock-on effect on the total revenue collected as part of the duty.
286. However, this reduction in vape duty revenue represents a transfer from the government collecting this tax to the people in society previously paying the tax. The people that no longer vape because of this policy benefit from an increase in the amount they can spend on other goods and services, and the government loses an equal amount that they can spend. Therefore, this reduction in tax revenue does not make society as a whole better or worse off.

Tobacco duty

287. HTPs are subject to the Tobacco Products Duty¹⁸⁸. 'Tobacco for heating' is subject to a duty rate of £343.91 per kg. Given that we expect standardised HTP devices to reduce the prevalence and hence consumption of HTP, this could likely have a knock-on effect on the total revenue collected as part of the duty.
288. This reduction in the tobacco products duty revenue represents a transfer from the government collecting this tax to the people in society previously paying the tax. The people that no longer use HTP because of this policy benefit from an increase in the amount they can spend on other goods and services, and the government loses an equal amount that they can spend. Therefore, this reduction in tax revenue does not make society as a whole better or worse off.

Reduction in VAT

289. Vapes and heated tobacco devices are also subject to Value Added Tax (VAT). As we would expect there to be a reduction in sales of vapes and HTPs as a result of the regulations, we would also expect there to be a reduction in tax revenue, from VAT.
290. However, this reduction in tax revenue represents a transfer from government collecting the revenue to consumers paying the VAT. The consumers that no longer

¹⁸⁴ ASH. 2025. [Use of vapes \(e-cigarettes\) among adults in Great Britain - ASH](#)

¹⁸⁵ OHID. 2022. [Nicotine vaping in England: 2022 evidence update.](#)

¹⁸⁶ Hajek and others. 2019. [A Randomized Trial of E-Cigarettes versus Nicotine-Replacement Therapy | New England Journal of Medicine](#)

¹⁸⁷ Global Burden of Disease. [VizHub - GBD Results \(healthdata.org\)](#)

¹⁸⁸ HMRC. [Tobacco Products Duty - GOV.UK](#)

use these products benefit from an increase in the amount they can spend on other goods or services. This reduction in tax revenue does not make society as a whole better or worse off.

Break-even analysis

291. For this measure it has been possible to estimate the costs to businesses to implement the measure, while the benefits such as improved health outcomes and reduced demand on services are harder to quantify. Break-even analysis provides a way of identifying the level of benefits required to offset the quantified costs and assess the point at which an intervention would deliver value even when the precise monetisation of the benefits is not possible.

Calculating the break-even point

292. To calculate the break-even point the overall monetised costs are taken and divided by the potential health benefits associated with children not taking up the products in scope, or adults quitting using the products in scope.
293. The evidence and analysis used to estimate the health benefits is outlined in the non-monetised benefits section and comes from previous tobacco and vaping IAs for the number of QALYs, and the Government of Canada for the relative health harms of vaping. This is used to produce a range of 'QALY gain' values to calculate break-even points against the monetised costs.
294. For heated tobacco products, we have applied the QALY gain for smoking cigarettes and hand-rolled tobacco due to lack of relevant evidence specific to heated tobacco products.
295. For young people, the estimated QALY gain values are based on:
- 1 QALY, for children not taking up heated tobacco products¹⁸⁹.
 - 0.2 QALY, for children not taking up vaping¹⁹⁰
296. For adults, the estimated QALY gain values are:
- 0.74 QALY, for people quitting heated tobacco products¹⁹¹.
 - 0.148 QALY, for people quitting vaping¹⁹²
297. The Green Book places a value of £70,000 on a QALY.

Break-even results

298. Based on the quantified costs of £330m in Options 2, 3 and 4, Table 24 below shows the number of fewer children and young people required to not take up each of the products in scope, or adults required to quit, to break even.

¹⁸⁹ Based on DHSC. 2015. [The Standardised Packaging of Tobacco Products Regulations 2015](#)

¹⁹⁰ Based on DHSC. 2015. [The Standardised Packaging of Tobacco Products Regulations 2015](#) and Government of Canada. 2021. [Canada Gazette, Part 1, Volume 155, Number 25: Order Amending Schedules 2 and 3 to the Tobacco and Vaping Products Act \(Flavours\)](#).

¹⁹¹ Based on DHSC. 2023. [Tobacco pack inserts](#)

¹⁹² Based on DHSC. 2023. [Tobacco pack inserts](#) and Government of Canada. 2021. [Canada Gazette, Part 1, Volume 155, Number 25: Order Amending Schedules 2 and 3 to the Tobacco and Vaping Products Act \(Flavours\)](#).

Table 24: Break-even results

Break-even scenario	Options 2, 3, and 4
Children not taking up vaping	23,600
Children not taking up heated tobacco	4,700
People quitting vaping	31,900
People quitting heated tobacco	6,400

299. Realistically, the break-even point will more likely be a combination of all of the above, which would reduce the number required in each of the break-even scenarios above.
300. The estimated fewer number of adults using vaping products (compared to the baseline) was around 176,000, and the fewer number of adults using HTPs was around 8,000. The break-even analysis demonstrates that the point at which costs would be covered falls below the estimated effect size.
301. For vaping, Table 24 demonstrates that the number of people needing to not take up vaping is equivalent to 13% of the expected prevalence drop in the central scenario (176,000). The number of people needing to quit vaping in the breakeven is equivalent to 18% of the expected prevalence drop in the central scenario.
302. For HTPs, Table 24 demonstrates that the number of people needing to not take up HTP is equivalent to 57% of the expected prevalence drop in the central scenario (8,000). The number of people needing to quit HTP in the breakeven is equivalent to 77% of the expected prevalence drop in the central scenario.

Sensitivity analysis

303. Given there are uncertainties throughout the impact assessment we have tested some of the key assumptions in sensitivity analysis. This includes:
- Vape baseline
 - Heated tobacco products baseline
 - Impact size
 - Profit margins

Vape baseline

Market size

304. As discussed in the vape baseline methodology section, we have updated the methodology to estimate vape market baseline, compared to the methodology used in the Tobacco and Vapes Bill IA.
305. To test how this change impacts the analysis, we have also modelled the impact of the policy using a similar methodology used in the Tobacco and Vapes Bill IA. This is using a top-down approach but is heavily reliant on estimates from assumptions from the disposable market that may no longer apply.
306. To calculate the market size using a top-down approach we:
- A. Estimate the number of disposable vapes on the market
 - B. Multiply number of disposables vapes on the market by the price of a disposable vape to get the total sales value for disposables

- C. Multiply the total sales figure by 2 to get the total market size (assumption that disposables make up 50% of the market value)
- D. Convert the disposable vape market value to an equivalent reusable market value following the ban, by applying conversion rates between disposables and reusables
- E. Apply DEFRA switching proportions to the disposable market value to account for those who may quit or switch to other products
- F. Total the existing reusable market (pre disposable ban) to the new converted reusable market.

A. Estimate the number of disposable vapes on the market

307. Based on a report by Material focus¹⁹³ it is estimated that 360 million vapes were placed on the market in 2023. In the Tobacco and Vapes Bill IA, the number of vapes on the market was projected forward using growth rates estimated by Eunomia¹⁹⁴ to account for growth in the market. However, to make this scenario comparable with the scenario presented and to reflect prevalence in the market stabilising we have assumed that the number of vapes in the market stays constant from 2025 onwards. For the appraisal period, this would translate to 520 million vapes on the market per year.

B. Multiply number of disposables vapes on the market by the price of a disposable vape to get the total sales value for disposables

308. To get the total sales value the total number of vapes is multiplied by the average price of a vape. This was estimated to be £5.38 by DEFRA¹⁹⁵. This translates to a total sales value of £2.8bn per year.

C. Multiply the total sales figure by 2 to get the total market size (assumption that disposables make up 50% of the market value)

309. Given the estimate for products on the market was based on disposable vapes only we need to also account for reusable vapes. The reusable vapes market was estimated to be 50% of the total market value¹⁹⁶, therefore the total market value is estimated to be £5.6bn.

D. Convert the disposable vape market value to an equivalent reusable market value following the ban, by applying conversion rates between disposables and reusables

310. For the 51% that switch to reusables the disposable vape value should be converted to the equivalent value of disposables. This is because typically reusable vapes are cheaper than disposables. This is based on conversion rates outlined by DEFRA's single-use vape ban IA.

¹⁹³ Material Focus. 2023. Number of disposable single-use vapes thrown away have in a year quadrupled to 5 million per week

¹⁹⁴ Eunomia. 2023. Analysis of the market for vapes: exploring the environmental impacts of single-use vapes

¹⁹⁵ Defra research conducted in 2023 based on a sample (a compiled list of approximately 40 products) of products for sale from both online and in-store retailers, including vape stores, newsagents and supermarkets

¹⁹⁶ Eunomia. 2023. Analysis of the Market for Vapes. Exploring the environmental impacts of single-use vapes.

Table 25: Conversion of disposable vapes to reusable vapes

Product	Disposable vape equivalent
Reusable device	300
Pack of cartridges (2 per pack)	2
E-liquid (10ml)	5

311. Based on these conversion rates and based on the assumption that 50% of the disposable users will use cartridges and 50% will use e-liquid, we can estimate the equivalent number of reusable vapes that would be consumed.
312. Based on the estimate that there would have been 520 million vapes on the market from 2027 onwards we can estimate the equivalent value of this.

Table 26: Estimated number of reusable products and value in 2027

Number of products	Number of products (millions)	Price per unit	Value (£m)
Reusable device	0.87	£9.00	7.8
Cartridge	130	£7.00	454.9
Reusable device	0.87	£17.00	14.7
E-liquid	52	£3	155.9
Total			633.4

E. Apply DEFRA switching proportions to the disposable market value to account for those who may quit or switch to other products

313. To account for the impact of the disposable vape ban. We assume the same switching behaviours as that outlined Table 3. This assumes 51% of disposable users will move to reusable vapes, 20% will quit and 29% will switch to other products. Therefore, the disposable vapes market value should be reduced by 49%.

F. Total the existing reusable market (pre disposable ban) to the new converted reusable market

314. To get the total value of the market, we combine the value of the previous reusable value (£2.8bn), with the new converted disposable value market value (£323m) to get a total market value per year across the appraisal period of £3.1bn in 2024 prices.

Lost profits

315. Table 27 shows the estimated profit loss for vape manufacturers, wholesalers and retailers if we were to use this baseline instead of the baseline using the bottom-up methodology. All other assumptions, such as, profit margins, are held constant.

Table 27: Sensitivity analysis for lost profit using alternative vape baseline methodology

Business	Top-down methodology (£m)	Bottom-up methodology (£m)
Manufacturer	68	39
Wholesaler	62	36
Retailer	424	244
Total	555	319

Limitations

316. Using the top-down methodology results in a much higher profit loss estimate than that of the bottom-up approach. The methods are not directly comparable, making it challenging to isolate the main driver of the differences in the approaches, however it could be driven by the estimate of the number of products on the market or the conversion rates between disposable and reusable vapes.
317. Whilst both methods are based on data available, we have opted for the bottom-up approach in our main scenario, given it uses more recent data and does not rely on significant assumptions, such as, conversion rates between disposable and reusable vapes, as well as starting from a point of number of disposable vapes on the market.
318. Given that the top-down methodology is a much higher figure, we can present this as our maximum scenario in modelling the profit loss.

HTP baseline

319. As discussed in paragraph 122, we have held heated tobacco prevalence still at 0.4% over the appraisal period in the baseline scenario. This is based on prevalence data reported by the Smoking Toolkit Study¹⁹⁷.
320. We have limited historic evidence on heated tobacco prevalence, and limited projections of prevalence estimates going forward, however recent data does not have a clear trend and prevalence appears to have varied. Additionally, there is anecdotal evidence that heated tobacco is an increasing problem.
321. To test the impact on business profits if a heated tobacco prevalence is higher than 0.4%, we have switched this assumption for a prevalence of 0.9% as reported by ASH¹⁹⁸.
322. If prevalence rates are higher in the counterfactual scenario, this would mean the starting market size is larger compared to the central scenario, and prevalence could be expected to fall by a larger absolute number.
323. Table 28 shows the results if we assuming a higher prevalence rate of 0.9% in our baseline.

¹⁹⁷ UCL. [Top Line Findings - Graphs - Smoking in England](#) (Accessed August 2025)

¹⁹⁸ ASH. 2024. [Use-of-vapes-among-adults-in-Great-Britain-2024.pdf](#)

Table 28: Sensitivity analysis for HTP baseline, 2024 prices, not discounted

Year	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
Population projection, UK adults (millions)	55.6	55.1	54.7	54.2	53.7	53.1	52.6	52.1	51.5	50.9
HTP prevalence	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%
Number of adult HTP users (millions)	0.50	0.50	0.49	0.48	0.48	0.48	0.47	0.47	0.46	0.46
HTP device value (£m)	19	19	19	18	18	18	18	18	18	17
HTP stick value (£m)	563	558	554	549	544	538	533	527	521	515

324. As in the central scenario, if prevalence were to fall by 1.9% in the first two years of the appraisal period we estimate a reduction in profit of £1m from devices, and £24m from sticks, with a total of £24m. This is compared to an estimated profit loss of £11m in the central scenario.

Impact size

Vapes

325. In the central scenario we have used 1.9% as our impact size, based on the effect size used in the standardised packaging of tobacco products IA. To reflect uncertainty in this estimate we can also apply an impact size of 2.4%. This is the impact size from the standardised packaging post implementation review, not accounting for other policies implemented at the time. This can be seen as a potential maximum impact size for standardising vape packaging.
326. Alternatively, the impact size may be lower than the 1.9%, given that whilst tobacco can be used as a proxy there are differences in the market that may influence the impact size. For example, adults using vapes as a smoking cessation tool may not be influenced by the device restrictions, therefore we would not anticipate prevalence to decrease in the same way as that for tobacco. In the absence of data on a low scenario, a 1.4% prevalence drop has been modelled to indicate the impact plus or minus 0.5 percentage points of the central scenario.
327. Table 29 shows the results on profit loss of applying these impact size to the number of adults that vape for the first two years.

Table 29: Sensitivity analysis for impact size on lost profit for vapes

Impact Size	Vape manufacturer lost profit (£m)	Vape wholesalers lost profit (£m)	Vape retailers lost profit (£m)	Total lost profit (£m)
2.40%	50	46	310	406
1.90%	39	36	244	319
1.40%	29	27	182	238

HTPs

328. As above, we can also apply the same sensitivity assumptions to HTPs.
329. Table 30 shows the results on profit loss of applying these impact size to the number of adults that use HTP for the first two years.

Table 30: Sensitivity analysis for impact size on lost profit for HTPs

Impact Size	HTP manufacturer lost profit (£m)	HTP wholesalers lost profit (£m)	HTP retailers lost profit (£m)	Total lost profit (£m)
2.40%	3	2	9	14
1.90%	2	1	7	11
1.40%	2	1	5	8

Profit margins

Vapes

330. As explained in paragraph 230, a report by the University of Edinburgh¹⁹⁹ that analysed profit margins for vape retailers found a profit margin of 37.1%. They break this down further by product.

¹⁹⁹ Tunstall, H. 2024. Tobacco and vape profits: analysis of EPOS data from small retailers in the United Kingdom in 2019 and 2022.

Table 31: Alternative vape profit margins

Product type	Gross margins (September 2022)
E-liquid	47.3%
Pod / cartridge refill	24.6%
Disposable device	36.8%
Vape kit	27.4%
Vape unclassified	37.8%
Total	37.1%

331. Given the profit margins for retailers used were based on disposable vapes (45%), we have tested this in sensitivity analysis using the data from the University of Edinburgh study, excluding disposable devices. The average profit margin would be 34.3%.
332. Table 32 shows the estimated profit loss for vape retailers using this alternative assumption for vape retailers profit margins.

Table 32: Sensitivity analysis for profit margins on lost profit for vape retailers

Vape retailers profit margin assumptions	Total lost profit (£m)
Central scenario (45%)	244
Sensitivity (34.3%)	186

Small and Micro Business Assessment (SaMBA)

333. For the SaMBA, we have presented the costs to small and micro businesses for the preferred option only. However, as we have not been able to estimate different costs for each option the estimates presented in this section could apply to all options.
334. This policy will apply to all size businesses, including small and micro businesses. The policy extends to businesses of all sizes as it would not be possible to exempt small businesses²⁰⁰ from this policy while still achieving the aims and objectives. This policy is aimed at creating standards for appearances across the vaping and heated tobacco markets, the restrictions therefore need to apply across the entire market in order to ensure that none of these products are appealing. Allowing small businesses to create or sell products with less stringent appearance restrictions would undermine the policy objectives by allowing products that are appealing to continue to enter the market.
335. The businesses considered in this Small and Micro Business Assessment (SaMBA) are retailers of vapes and HTPs. The impacts considered for these businesses are:

²⁰⁰ Based on the [better regulation framework guidance](#) small businesses are defined as those employing between 10 and 49 full-time equivalent (FTE) employees. Micro-businesses are those employing between one and nine employees. Small and micro businesses include voluntary and community bodies (also known as civil society organisations)

- Familiarisation costs
 - Lost profits
336. These small and micro businesses could also potentially incur costs for excess stock disposal. However, as explained, it has not been possible to monetise this cost.
337. The costs incurred by retailers and wholesalers who sell vapes and HTP are quantified for this SaMBA. A small number of tobacco manufacturers are considered for familiarisation costs.
338. Additionally, due to limited data we have not included the impact on businesses involved in imitation of vapes and heated tobacco devices.
339. There may also be online retailers that are small and micro businesses that experience reduced profits and familiarisation costs, but we have not been able to identify sufficient data on these businesses to quantify the impact for this SaMBA.

The number of small and micro retailers that sell vapes and HTPs

340. As outlined in paragraph 195, we estimate there to be:
- 51,931 convenience stores²⁰¹, of which 71% are independently operated.
 - 5,831 supermarkets²⁰², excluding discounters that generally do not sell vapes
 - 3,573 vape shops²⁰³.
 - 1,700 specialist tobacconists²⁰⁴
 - 12,852 pharmacies from NHA Business Services Authority²⁰⁵, Scottish Government²⁰⁶, Welsh Government²⁰⁷, HSC Business Services Organisation²⁰⁸.
341. In total, we estimate that there are 76,000 retailers in the UK that sell vapes and HTP.
342. We have assumed that all supermarkets are not small or micro businesses.
343. To estimate the total number of convenience stores in the UK that are small or micro businesses we use information from the ACS Local Shop Report 2025. The report estimates that 71% of the convenience stores are independent retailers. Independent retailers include unaffiliated and symbol groups. We assume that multi-operated stores are not small and micro businesses and assume that all independent convenience stores are small or micro businesses. Using GB as a proxy for mainland UK, we have used ONS population estimates²⁰⁹ to scale up the number of retailers for the UK. Therefore, we estimate that there are 37,000 convenience store retailers in the UK that are small and micro businesses.
344. In addition, there is limited data on vape stores and specialist tobacconists and their size, therefore we assume that all 3,573 vape stores and most (1,695 of 1,700)

²⁰¹ Association of Convenience Stores. 2025. [The Local Shop Report | ACS](#). We have uplifted the ACS mainland UK estimate to represent the whole of the UK by using GB population estimates as a proxy.

²⁰² IGD. 2024. [UK Grocery Store Numbers 2024](#).

²⁰³ Local Data Company. 2023. Accessed via Tobacco Reporter here: [Number of U.K. Vape Shops Up in 2023 - Tobacco Reporter](#)

²⁰⁴ ONS Nomis. 2024. [UK Business Counts - enterprises by industry and employment size band - Nomis - Official Census and Labour Market Statistics](#)

²⁰⁵ NHS Business Services Authority. [Pharmacy Openings and Closures - PHARMACY_OPENCLOSE_202506 - Open Data Portal](#) (June 2025)

²⁰⁶ Scottish Government. [Pharmacy - Primary care services - gov.scot](#)

²⁰⁷ Welsh Government. 2024. [Community pharmacy services: April 2023 to March 2024 | GOV.WALES](#)

²⁰⁸ Business Services Organisation. 2025. [General Pharmaceutical Services and Prescribing Statistics - Business Services Organisation \(BSO\) Website](#)

²⁰⁹ ONS. 2025. [Population estimates for England and Wales - Office for National Statistics](#)

specialist tobacconists²¹⁰ in the UK are small and micro businesses. In practice this could be an overestimate as some of the stores could be larger chains.

345. We estimate 12,209 pharmacies to be small or micro businesses. To estimate the number of pharmacies that are small and micro businesses we have used estimates from the IA on the extension of hub and spoke dispensing²¹¹. This IA estimated that 95% of the pharmacies were small and micro businesses.
346. Based on these categories of stores, we estimate that there are 54,000 vape and/or heated tobacco retailers in the UK that are small and micro businesses. This is around 72% of our estimate for the total number of vape and HTP retailers in the UK. We do not have specific data on the proportion of sales of vapes and HTP that are in small and micro retailers.
347. We do not have specific data on the proportion of sales of vapes that are attributed to small and micro retailers. For the purpose of this SaMBA we will assume it will be uniform across all businesses. In practice small and micro retailers may have less revenue and less profit than that of large businesses that are more likely to benefit from economies of scale.

The number of small and micro wholesalers that sell vapes and HTPs

348. As reported by NOMIS data²¹², as of 2024 there were 15,490 wholesalers of food, beverages, and tobacco in the UK that are small and micro businesses. This is equivalent to 96% of total wholesalers of food, beverages, and tobacco.

The number of small and micro manufacturers that sell vapes and HTPs

349. We have assumed that manufacturers are likely to be larger due to the nature of their businesses. However, Nomis data²¹³ reports that in the UK there are five tobacco manufacturers which are all located in England. Whilst we think it is unlikely that these are heated tobacco manufacturers, it is possible that they produce these products. Therefore, we have included their familiarisation costs in this SaMBA as to not underestimate the impact on small and micro businesses. However, we do not have sufficient evidence to estimate what proportion of profit loss could be applicable to these businesses so we have not accounted for this in the SaMBA. We also know that all five manufacturers are small and micro businesses so if their profits are impacted by this policy they would be disproportionately impacted compared to other manufacturers who we assume are transnational companies.
350. Based on information provided by MHRA from vape product notification data, there are 323 manufacturers of vapes in the UK, and around 71 importers of vapes.
351. We have assumed no vape manufacturers are small or micro businesses.

Familiarisation costs

352. The estimated costs per business for familiarisation would be the same as each business would be subject to the same regulations. However, this may represent a larger burden on small and micro businesses that will have fewer staff available to undertake this familiarisation.

²¹⁰ ONS Nomis. 2024. [UK Business Counts - enterprises by industry and employment size band - Nomis - Official Census and Labour Market Statistics](#)

²¹¹ DHSC. 2025. [Extension of hub and spoke dispensing to different legal entities](#).

²¹² ONS Nomis. 2024. [UK Business Counts - enterprises by industry and employment size band - Nomis - Official Census and Labour Market Statistics](#)

²¹³ ONS Nomis. 2024. [UK Business Counts - enterprises by industry and employment size band - Nomis - Official Census and Labour Market Statistics](#)

353. To estimate familiarisation costs, we multiply the familiarisation cost for all retailers and wholesalers by the percentage of those that are small and micro businesses. As outlined above, we estimate 54,000 retail stores are small and micro businesses, which is equivalent to 72% of all retailers in scope, and 15,490 wholesalers, which is equivalent to 96% of wholesalers in scope.

354. Table 33 shows the estimated familiarisation costs for small and micro retailers.

Table 33: Familiarisation costs for small and micro retailers

Option	Familiarisation costs for small and micro retailers
Option 3	£1.7m

355. For context, this is estimated to be equivalent to £30 per small and micro retailer.

356. Table 34, shows the estimated familiarisation costs for small and micro wholesalers.

Table 34: Familiarisation costs for small and micro wholesalers

Option	Familiarisation costs for small and micro wholesalers
Option 3	£0.4m

357. Table 35 shows the estimated familiarisation costs for small and micro manufacturers.

Table 35: Familiarisation costs for small and micro tobacco manufacturers

Option	Familiarisation costs for small and micro manufacturers
Option 3	£500

Lost profits

358. The estimated costs per business for lost profits may disproportionately affect some shops or wholesalers, such as those that predominantly sell vapes or tobacco, as they may not have a diverse range of products where additional spend may recoup some of the lost profits. However, it has not been possible to exempt these businesses from the measure while meeting the objectives.

Retailers

359. As discussed above, we estimate the total number of retailers in scope of this policy to be 76,000. Due to limited evidence, we cannot distinguish whether profit margins differ between different size retailers, we have therefore assumed all size retailers to have the same profit margin for vapes of 45%, and 9% for HTP.

360. As outlined in the monetised cost section above, over the ten-year appraisal period, we estimate a discounted profit loss to all retailers to be around £251m (£244m lost profits from reduced vape sales, and £7m from lost profits from reduced HTP sales). To provide an illustrative estimate for the profit loss per store we can divide total profits lost by total stores that sell vapes (76,000) and HTP (63,000). We calculate

profit loss per store from vapes over the appraisal period to be £3,200 per retailer that sells vapes, and £100 profit loss from HTP per retailer that sells HTP. This figure is purely illustrative and will vary depending on the type of retailer, for example we would expect retailers that only sell tobacco or vape products to see a larger profit loss, compared to those with a wider range of products.

361. As outlined, we estimate 72% of retailers to be small and micro businesses, which is equivalent to 54,000 retailers in total. Of these we estimate all 54,000 sell vapes, and 42,000 sell heated tobacco which is equivalent to 67% of total retailers. Assuming loss in profits from reduced vape and heated tobacco sales are split equally across the relevant stores in scope, multiplying total costs by the percentage of total retailers in scope, can provide an estimated cost to small and micro businesses.

Table 36: Lost profit for small and micro retailers

Option	Lost profit for small and micro retailers
Option 3	£179m

362. For small and micro convenience stores, we can contextualise these lost profits using the ACS Local shop report publication²¹⁴. If total revenue for the sector is forecast to be £48.8bn in 2025, dividing this by the number of convenience stores (51,931), the annual revenue per store in 2025 is estimated to be £1m. The ACS publication reports that 18.8% of sales in 2024 were tobacco and vape sales, assuming this represents the value of tobacco and vapes sales of total convenience store revenue we estimate that approximately £0.2m of revenue per store in 2025 is due to tobacco and vape sales. Assuming all products sold under 'Tobacco and Vapes' in the ACS publication either have a profit margin between that assumed for vapes (45%) or heated tobacco (9%), we estimate profit per store in 2024 to be between £16,000 to £79,000 per year in a counterfactual scenario. Taking the second appraisal year as an example, total profit loss to retailers from reduced vape sales is £29m, dividing through by the number of retailers that sell vapes (76,000), the estimated profit loss per store is estimated to be £383 profit loss per retailer. Total profit loss to retailers from reduced HTP sales in the second appraisal year is £0.9m, dividing through by the number of retailers that sell HTP (63,000), the estimated profit loss per store is estimated to be £14 profit loss per retailer. For a convenience store that we assume sells both these products, a total profit loss per store in the second year of appraisal of £396, is equivalent to 0.5% to 2.4% of annual tobacco and vapes profits (£16,000 to £79,000) in 2025. However, revenue and profit may differ in our appraisal period, compared to those provided by ACS for 2025, so these estimates should be taken as indicative only.
363. Likewise, if we assume profit margins for all goods sold in convenience stores matches the 9.2% to 45% profit margin we have applied for HTP and vapes, we can multiply this by 2025 revenue per convenience store estimated above (£1m) to estimate total profit per convenience store to be £86,000 to £423,000 in 2025. The estimated loss in profit per store in 2028 (£396), for example, is therefore estimated to be equivalent to 0.1% to 0.5% of annual convenience store total profit. In reality, we expect profit margins to differ between products so this estimate may not be an accurate reflection of what proportion of total profits for a convenience store it represents.

²¹⁴ Association of Convenience Stores. 2025. The Local Shop Report | ACS

364. We do not have the same data to estimate profit loss per store for specialist shops or supermarkets as we do not have intelligence on their annual revenue or profit. This means we cannot provide equivalent estimates for these larger businesses and determine if the policy would have a disproportionate impact on different size businesses.
365. Also, it is likely that any loss in profits will at least in part be offset by increased profits on goods and services purchased in place of vapes and HTPs.

Wholesalers

366. As discussed in paragraph 195, we estimate the total number of wholesalers in scope of this policy to be 16,080. Due to limited evidence, we cannot distinguish whether profit margins differ between different size wholesalers, we have therefore assumed all size wholesalers to have the same profit margin for vapes of 12% (6.6% of sales price), and 1.90% for HTP.
367. As outlined in the *Monetised cost section*, over the ten-year appraisal period, we estimate a discounted profit loss to all wholesalers to be around £37m (£36m lost profits from reduced vape sales, and £1.5m from lost profits from reduced HTP sales). To provide an illustrative estimate for the profit loss per wholesaler we can divide total profits lost by total number of wholesalers. We calculate profit loss per store over the appraisal period to be £2,300. This figure is purely illustrative and will vary depending on the type of wholesaler and the products they sell, for example we would expect wholesalers that only sell tobacco or vape products to see a larger profit loss, compared to those with a wider range of products.
368. As outlined, we estimate 96% of wholesalers to be small and micro businesses, which is equivalent to 15,490 wholesalers in total. Assuming loss in profits are split equally across all wholesalers in scope, multiplying total costs by 96% can provide an estimated cost to small and micro businesses.

Table 37: Lost profit for small and micro wholesalers

Option	Lost profit for small and micro wholesalers
Option 3	£36m

Reduced footfall and associated lost profit

369. Small and micro retailers may also incur lost income from reduced footfall-related sales. These are sales of goods bought in addition to vapes and HTP. If the products in scope of this policy are the primary reason for customers entering retailers, there could be reduced profit if the secondary items are also not purchased.
370. It could be assumed that this is more likely to impact small and micro retailers, if a smaller number of items are typically purchased in small and micro retailers compared to supermarkets. The ACS estimate that the average number of items purchased in convenience stores is 2.7, with an average sales amount of £7.81²¹⁵. If the items in scope of this policy are the intended purchase item and an additional 1.7 items are no longer purchased due to reduced footfall, this could result in additional lost profits.
371. However, there is not sufficient evidence on whether the products in scope of this policy, are the main reason that individuals visit the convenience stores. As a result, we cannot conclude that this policy would also lead to reduced footfall for small and micro retailers.

²¹⁵ Association of Convenience Stores. 2025. [ACS Local Shop Report 2025.pdf](#)

372. Additionally, using tobacco as a proxy, a 2016 report by ASH²¹⁶ reviewed data from 1,400 small retailers across the UK using an electronic point of sale system and compared tobacco and non-tobacco transaction rates. The majority of transactions did not include any tobacco (79%), 13% of transactions included both tobacco and non- tobacco products, and 8% were for tobacco products only.
373. The analysis compared the average values of the different types of transaction and concluded that there was no relationship between the sales of tobacco products and non-tobacco products, and that “smokers approach the till with a similar basket of everyday items to those who come into the shop with no desire to buy tobacco.” Although not specifically in relation to vapes or other nicotine products, this is evidence that there isn’t a single item that is the primary reason customers enter small retailers. This suggests that impact of lost income from reduced footfall-related sales for small and micro retailers as a result of this policy may be limited.

Total impact on small and micro businesses

374. Table 38 shows the estimated impact on small and micro businesses for Option 3.

Table 38: SaMBA summary

Cost	Total cost for small and micro businesses (£m)
Familiarisation costs	2
Lost profit	215
Total	217

Potential disproportionate impacts

375. In addition to the costs, it could be possible that some of the costs to businesses of this policy will have a disproportionate impact on small and micro businesses.
376. One example of this is time and opportunity cost when familiarising with the policy. As small and micro businesses have less employees, the opportunity cost on the shopkeepers and owners time could be greater as they have fewer employees to cover the shifts of employees while they are familiarising themselves with the policy. However, whilst medium and large businesses may have more employees to assist with this, due to the size of their business it is logical to assume more people within the businesses, such as the manager in each shop, will need to familiarise themselves with the guidance which could be an additional burden to medium and large businesses. This means familiarisation costs could potentially vary in proportion with the size of the business and not result in disproportionate impact on small and micro businesses.
377. For small and micro retailers in scope of this policy, it could be possible for them to substitute the sale of vapes and other nicotine products for other products they sell. However, this may not be possible for vape stores who we assume only sell vape and other nicotine products. It may also be easier for medium and large stores to also sell other products, assuming they already sell a wider range of products.
378. Another example where there could be disproportionate impacts on small and micro businesses is on their profit margins. Throughout this IA, we have assumed retailers’

²¹⁶ ASH 2016. Counter Arguments – How important is tobacco to small retailers? - ASH

profit margin is 45% to estimate potential impacts on profit. Due to limited data, we cannot distinguish profit margins between different sized businesses. If we assume small and micro businesses hold a smaller number of products and less diversified stock than medium and larger businesses, it could be possible that these products account for a larger share of the business profit compared to medium and large businesses.

379. Whilst we are aware small and micro businesses could be disproportionately impacted, we have considered mitigations for these below.

Potential mitigations for small and micro businesses

Lead-in times

380. Potential impacts on small and micro businesses can be mitigated by lead-in times. The restrictions on vape and HTP devices will come into place on a date set out in the legislation. An appropriate lead-in time can be given to allow businesses enough time to produce compliant devices and sell through existing stock. Appropriate lead-in times and implementation periods will be tested during the consultation.

Stakeholder engagement

381. More specific engagement with stakeholders is difficult because the UK is a member of the World Health Organisation Framework Convention on Tobacco Control²¹⁷. Guidance for the implementation of Article 5.3²¹⁸ of the convention states “In setting and implementing their public health policies with respect to tobacco control, Parties shall act to protect these policies from commercial and other vested interests of the tobacco industry in accordance with national law”. This recognises the conclusion from the World Health Assembly that the tobacco industry has operated for years with the express intention of subverting the role of governments and of WHO in implementing public health policies to combat the tobacco epidemic. To further minimise the impact on small and medium sized businesses, where appropriate and aligned with the UK’s commitments to Article 5.3 of the WHO FCTC, we will conduct additional, targeted and technical consultations with industry to ensure the specifics of the regulations are aligned with current practice and understanding. We will also work with industry to produce guidance for businesses, ensuring they have the necessary information to make the changes.
382. However, industry are able to respond to our consultations and calls for evidence. Many tobacco companies are diversifying as result of the decreasing prevalence of smoking, this diversification has led to many tobacco companies owning, having shares in, or having links with vaping companies. We therefore need to be mindful of the balance between engaging and protecting public health policy from the influence of the tobacco industry, and only engage if it is necessary.
383. Whilst some vaping organisations have taken steps to remove tobacco industry influence this is not the case across the industry as a whole and it is difficult to verify where stakeholders are free from tobacco industry influence unless this is stated and proven outright. Due to this consideration, engagement outside of an open government consultation is very difficult.

Distributional and wider impacts

Distributional impacts

Consumers

217 World Health Organisation. [WHO Framework Convention on Tobacco Control](#)

218 World Health Organisation. 2013. [who-fctc-article-5.3.pdf](#)

384. We are unable to accurately assess the distributional impacts of the regulations due to a lack of data on socio-economic status of individuals who vape or use heated tobacco products.
385. The Smoking Toolkit Study²¹⁹ shows that vape prevalence was higher in less advantaged social grades (C2DE) compared to more advantaged social grades (ABC1). This could suggest that the policy may impact a larger proportion of individuals from a lower social grade. This would have a positive distributional impact.
386. We are not aware of data to assess whether there are geographical differences in consumers using vapes and HTP products so are therefore unable to assess geographical impacts. The regulations will cover the whole of the UK, therefore, consumers in particular regions are unlikely to be impacted differently.

Businesses

387. We are unable to identify data on UK based vape manufacturers to assess the distributional impacts.
388. For retailers that will be impacted by the regulations, in particular vape shops who will face reduced profits there is data to suggest that there are more vape shops in deprived areas. This could indicate that deprived areas may be disproportionately impacted.
389. A report by Health Equity North²²⁰, identified some of the regional differences in vape shops. They found that there are over three times more vape shops in the most deprived areas of England compared to the least deprived areas. In addition, in 2024, the report found that there are double the number of vape shops in the north (0.6 per 10,000 people) when compared to the south (0.3 per 10,000 people). This could indicate that the policies may have a disproportionate effect on areas such as in the north where there are more vape stores, and hence a larger proportion of the costs to businesses could apply in those areas.
390. In addition, a CEBR report²²¹ shows the regional breakdown of direct turnover of the UK vaping industry in 2020. It is likely that the market has changed since 2020, however this could give an indication of regional differences. The report identified that the largest contributor in 2020 to direct turnover was the South East (16.3%), whilst the smallest contributor was Northern Ireland (2.9%).
391. Areas with a higher proportion of vape shops may incur a higher proportion of the costs that businesses face.
392. UK Business Counts²²² provides data on the number of wholesalers of food, beverages and tobacco, which we assume also sell vaping products and nicotine products. Based on this data there are 28% based in London, 12% based in the South East and 10% based in the North West. Wholesaler industries in these regions may face a higher proportion of the costs, relative to other areas that have a lower proportion of businesses.

Wider impacts

Consumers

Household income

²¹⁹ Smoking Toolkit Study. 2025. E-cigarette latest trends.

²²⁰ Health Equity North. 2025. Ghost Towns. The Decline of the High Street and Health Inequalities.

²²¹ CEBR. 2022. Economic impact assessment of the vaping industry.

²²² ONS Nomis. 2024. Nomis - Query Tool - UK Business Counts - enterprises by industry and employment size band

393. Should prevalence and consumption of products be reduced, it is also possible that disposable income may increase if individuals are spending a reduced amount on vapes or HTPs. However, at a societal level we have assumed this is an economic transfer as whilst individual households may have more income, businesses would have reduced income, and we could assume households would substitute this 'saving' with the purchase of other items.
394. Whilst it is not possible to estimate diverted spending per household from this policy, to illustrate potential gains we can use estimates provided by ASH. ASH estimate the national average spend on tobacco is around £2,388 per smoker, and an estimated £12.1bn is spent by consumers on purchasing tobacco (legal and illicit) annually in England.

Switching to other harmful products

395. Consumers could potentially switch to other harmful products, which would reduce or worsen health gains and/or household income. However, options have been designed to mitigate this and maintain a differential between harmful tobacco products and vapes.

Challenges for smoking cessation

396. Smokers using vapes as a smoking cessation aid could be less likely to quit smoking, having a health disbenefit. However, options have been designed to mitigate this and maintain a differential between harmful tobacco products and vapes.

Business environment

Attractiveness of business environment

397. Ongoing costs such as profit loss are likely to impact the longer-term attractiveness of the business environment for vapes and heated tobacco devices. Costs on businesses may lead to some businesses, who are not able to compete, exiting the market.

Market concentration and competition

398. Whilst the policy does not directly limit the number of businesses or the ability for businesses to compete in the domestic market, the policy may increase barriers to entry into the market.
399. Manufacturers may have to redesign products or planned future products, resulting in costs that prevent new businesses from entering the market.
400. Also, standardising the appearance of vapes and heated tobacco devices is likely to reduce the ability for businesses to compete through the use of branding and attractiveness of the device.

Foreign investment

401. The attractiveness of selling products in scope in the UK may decline. This could in turn reduce investment into manufacturing/selling in this country.

Scope for business to bring innovative products and services to market

402. The regulation does not directly impact businesses ability to bring innovative products and services to market, it does however restrict the appearance of all vaping and HTPs (other than medicinally licensed products).

Indirect impact on other industries/products

403. Due to the nature of some businesses there may be knock-on impacts if consumption of other products changes. For example, if additional products purchased when buying vapes or tobacco products are no longer purchased.

International trade considerations

404. The regulation does not directly impact international trade but may indirectly impact international trade by creating a barrier to importing. Vapes and heated tobacco devices imported into the UK will need to comply with the UK device appearance regulations. As such, costs may be incurred by international manufacturers similar to costs outlined in the cost to business section, whereby they will need to ensure their products are suitable for a UK market.
405. The UK Government will need to notify the WTO of proposed regulatory changes. During this notification period, other WTO members are able to engage with the UK to raise objections or to discuss the details of the new legislation in relation to businesses in their jurisdictions that export to the UK market.

Natural capital and decarbonisation

406. This measure is unlikely to have an impact on UK natural capital and decarbonisation of the economy, and no estimates on the changes to greenhouse gas emissions have been made.

Monitoring and Evaluation of preferred option

Background

407. This section sets out our provisional plans for monitoring and evaluation; informed by HM Treasury's Green Book²²³, Magenta Book²²⁴ and the Department for Business and Trade Better Regulations guidance on post implementation reviews (PIRs)²²⁵.
408. As set out in the Small Business Enterprise and Employment Act 2015, we must carry out a PIR within 5 years of commencement of secondary legislation that has a significant impact on businesses. For example, if the policy is implemented in 2028, a post implementation review would be required by 2033. This allows sufficient time for implementation and for the Department to have time for any additional research needed, for example to better understand any emerging issues or policy changes needed to inform the post implementation review. Taking the maximum time available to evaluate will also ensure that the full implementation can be evaluated and impacts and unintended consequences that may develop over time can also be captured.
409. The aim of the PIR would be to establish whether the regulation:
- Has achieved its objectives
 - Has objectives that remain appropriate
 - Is still required and remains the best option for achieving objectives and consider whether objectives can be achieved in another way which involves less onerous regulatory provision to reduce the burden on business and/ or increase overall societal welfare.

Monitoring and evaluation

410. The Act provides a number of powers to bring in secondary legislation, which we will be required to evaluate. As appropriate we will form more detailed evaluation plans, including regulations that will benefit from being evaluated together.
411. For example, where regulations have common research approaches, we could gather data from key respondent groups (e.g. smokers, vapers, public, small business owners) to collect data for multiple regulations at the same time. In practice

²²³ HMT. 2022. [The Green Book \(2022\)](#)

²²⁴ HMT. 2020. [Magenta Book. Central Government Guidance on Evaluation.](#)

²²⁵ Department for Business & Trade. 2024. [Producing post-implementation reviews: principles of best practice.](#)

some of the regulation timelines and implementation periods may differ so it may not always be possible to evaluate them together.

412. Any independent evaluations commissioned for this policy will likely include all aspects of the magenta book methodologies, including process evaluation, outcome/impact evaluation, and economic evaluation. Additional information on how this work could be commissioned is outlined in paragraph 435. This will aim to assess:
- How well did the intervention meet its objectives?
 - Were there unexpected outputs, outcomes or unintended effects?
 - Were costs, benefits and delivery times as predicted?
 - Was delivery achieved as expected and were any changes needed?
 - What can be learnt for future interventions?
413. Given the proposed structure of the regulations, it may not be possible for experimental (randomised designed) studies to be used. For example, if policies are implemented uniformly across nations and all businesses are in scope of the policies this would not allow for a control to be established. Therefore, it would be expected that non-experimental observational and cost-effectiveness designs will be used.
414. The evaluation is likely to use a mixed approach influenced by issues such as timelines and data availability. It is also likely that the evaluation will be a multi-phased study or studies given that it is likely to look at multiple regulations implemented across different time periods. In addition, it may be challenging to isolate the policy impacts from other related policies, some impacts could be considered across a range of policies.

Policy objectives

415. As part of the monitoring and evaluation for restricting the appearance of vapes and heated tobacco products we will need to assess whether the policy has met the objectives that were set out in the *Policy objectives* section of this IA.
416. The expected impacts, including unintended impacts, outlined in logic model in Figure 1, where possible, should be monitored and evaluated.
417. We consider the main external factors that may affect the success of the policy to include compliance by retailers and enforcement of the policy.
418. Due to the long-term nature of some of the impacts of the policy, there is likely to be a time-lag between when the policy is implemented and when some of the impacts occur. For example, there are unlikely to be any health impacts within five years, therefore the evaluation is likely to focus on short- and medium-term impacts. As such, it will also be important to use a range of research methods and approaches to ensure that long-term outcomes are being captured alongside short-term outcomes.

Monitoring

419. We have identified data needs and areas to monitor to understand if the policy objectives have been achieved. These can be split into consumers, businesses and enforcement.

Consumers

420. For consumers we intend to monitor several metrics to be able to monitor changes in the number of people vaping, the number of people switching to alternative products, any unintended impacts on smoking cessation rates, and public attitudes to products. We will do this by measuring:

- Youth and adult vaping prevalence
- Number of vaping quits
- Youth and adult heated tobacco prevalence
- Youth and adult smoking prevalence
- Smoking cessation rates
- Proportion of people using vapes to quit
- Attitudes and perceptions to vaping
- Attitudes and perceptions to heated tobacco

Enforcement

- Enforcement / trading standards cases on non-compliant products: We will monitor this to understand if there is an increase in the illicit market / to understand if businesses are complying with regulations.
421. We have identified some existing data that can be used to monitor these areas. More robust surveys, such as those with a larger sample size and more frequent, are likely to support more robust monitoring and evaluation over time. Monitoring can be done internally using publicly available sources, or alternatively can be commissioned, where additional data could be collected to fill in any gaps.
422. This monitoring can be done both internally by using the publicly available sources identified, to look at trends and changes or alternatively can be commissioned as part of the evaluation and additional data, not currently available can be collected to fill any gaps.

Youth vaping prevalence

- Smoking Drinking and Drug use among Young People Survey (SDD)²²⁶ shows smoking and vaping prevalence for 11- to 15-year-olds. This survey collected responses from 13,192 pupils, it is currently conducted every two years.
- The Adolescent Health Study²²⁷ will track young people over 10 years to collect behaviour data on health and wellbeing, including the impact of smoking and vaping. The two-year pilot phase is expected to commence in 2026, which could mean data is available for the monitoring and evaluation of vaping regulatory measures.
- ONS Adult Smoking Habits in the UK provides smoking prevalence data for adults aged 18 and over, split by age, gender, location socio-economic status and other demographics. This could be used to monitor the impact of increased regulations on vaping, to understand if there is either an increase in adults smoking or vaping.
- ASH annual survey on youth vaping²²⁸ contains data on vaping prevalence among 11- to 17-year-olds and information on sources of vapes, awareness of vapes and reasons for vaping. This is an annual survey, which could be used to provide monitoring of vaping policies.
- Health Survey for England²²⁹ is a survey that collects data on cigarette smoking and vape use. However, it should be noted that this survey is

²²⁶ NHS Digital. 2024. [Smoking Drinking and Drug Use among Young People in England](#).

²²⁷ UKRI. 2025. [Adolescent Health Study](#).

²²⁸ ASH. 2024. [Use of vapes \(e-cigarettes\) among young people in Great Britain](#).

²²⁹ NHS Digital. 2024. [Health Survey for England](#).

undergoing a transition and there will be future data collection plans from 2027 onwards²³⁰.

- Additional data that can also support on the monitoring of youth and adult vaping prevalence includes the Health survey for Northern Ireland²³¹, National Survey for Wales²³² and School Health Research Network²³³.

HTP prevalence

- The Smoking Toolkit Study (STS)²³⁴ is a survey in England that collects data on smoking behaviour and smoking cessation. This could monitor vapes being used as smoking cessation tools, use of heated tobacco products and vaping and smoking prevalence. The STS collects monthly data but also monitors the same cohort of people over time.

Smoking prevalence

- ONS Adult Smoking Habits in the UK provides smoking prevalence data for adults aged 18 and over, split by age, gender, location socio-economic status and other demographics. This could be used to monitor the impact of increased regulations on vaping, to understand if there is either an increase in adults smoking or vaping.
- Smoking Drinking and Drug use among Young People Survey (SDD)²³⁵ shows smoking and vaping prevalence for 11- to 15-year-olds. This survey is currently conducted every two years.

Smoking cessation and people using vapes to quit

- ONS Adult Smoking Habits in the UK also provides data on the number of people quitting smoking.
- NHS Statistics on Local Stop Smoking Services in England²³⁶ is a quarterly report which includes information on quit rates including the type of aids used to quit. This is broken down by age, ethnic group, socioeconomic classification and at local authority level.

Attitudes and perceptions on vaping and heated tobacco

- ASH Smokefree GB Youth Survey²³⁷ tracks the perceptions of harm of vapes compared to cigarettes over time for young people (age 11-17). The survey also asks about young people's intention to try vapes or cigarettes. The survey also previously tracked awareness of heated tobacco.
- ASH Smokefree Adult Survey²³⁸ tracks the perceptions of harm of vapes compared to cigarettes over time for adults. The survey also tracks awareness of heated tobacco.

423. It should be noted that some datasets and surveys identified may evolve over time, with the potential for questions to change. We should take this into account when finalising any data sources that can be used for monitoring and evaluation. Sources of data will be kept under review as plans for monitoring and evaluation are developed.

²³⁰ NHS Digital. 2025. [Health Survey for England- Health, social care and lifestyles.](#)

²³¹ Department of Health. 2025. [Health Survey Northern Ireland.](#)

²³² Welsh Government. 2025. [National Survey for Wales.](#)

²³³ The School Health Research Network. 2025. [School Health Research Network](#)

²³⁴ University College London. [Smoking Toolkit Study.](#)

²³⁵ NHS Digital. 2024. [Smoking Drinking and Drug Use among Young People in England.](#)

²³⁶ NHS England. [Statistics on Local Stop Smoking Services in England.](#)

²³⁷ ASH. 2025. [Use of vapes among young people in Great Britain.](#)

²³⁸ ASH. 2025. [Use of vapes \(e-cigarettes\) among adults in Great Britain - ASH](#)

424. Also, some gaps in data may remain and there may be additional sources of data that we can use in the future to monitor the impact of the policy. In this situation, we will consider additional sources to fill these gaps.
425. For example:
- **Vaping cessation:** There is currently limited data on vaping cessation. Whilst this can be inferred from changes in prevalence data, there isn't specific data on the number of vaping quitters and quit attempts. We should seek to fill this gap or further identify sources.
 - **HTP cessation:** There is currently limited data on HTP cessation. Whilst this can be inferred from changes in prevalence data, there isn't specific data on the number of HTP users quitting and quit attempts. We should seek to fill this gap or further identify sources.
 - **Impact on businesses:** To monitor the impact on business we could conduct similar research to that conducted by the Kings Fund Research²³⁹ for tobacco standardised packaging to understand the impact of the regulations on businesses. This research produced collected qualitative evidence of the impact of standardised packaging of tobacco and tobacco and related product regulations on small businesses.
 - When the Vaping Products Duty is in place (October 2026) it is likely HMRC will obtain data on the volume of vaping products and the number of manufacturers. This data could be used to monitor products being manufactured, imported and packaged for retail. Access to HMRC data for monitoring and evaluation purposes is pending data sharing agreements.
 - **Enforcement:** To monitor the enforcement of the policy we would work with trading standards to identify the level of compliance with the regulations. This could be either quantitative or qualitative data.
426. We could also undertake periodic evidence reviews to assess any additional data being published elsewhere, covering any of the identified areas or other emerging areas.

Evaluation

427. Following on from the monitoring, we would seek to answer research questions on the regulations. These have been designed to cover objectives, understanding the impacts and understanding any unintended consequences of the policy:
- Has the policy achieved its objectives? Do the objectives remain appropriate?
 - Does the policy remain the best way to achieve the objectives?
428. To further breakdown whether the objectives have been achieved we would want to explore the following questions:

Vaping

- Has youth vaping declined as a result of the regulations?
- Has there been any substitution effect between products as a result of the regulations?

HTP

- Has youth and adult HTP declined as a result of the regulations?

²³⁹ The Kings Fund. 2021. Qualitative assessment of the impact of the Standardised Packaging of Tobacco and Tobacco and Related Products Regulations on small businesses.

- Has there been any substitution effect between products as a result of the regulations?

Smoking cessation

- Have smoking rates changed as a result of the regulations?
- Are fewer adults using vapes or nicotine products as smoking cessation tools?

Unintended consequences

- Have there been any unintended consequences as a result of the policies?
429. Unintended consequences that could arise as a result of the regulations refer to outcomes that are not foreseen or intended by a particular action or policy. The evaluation will seek to explore whether any unintended consequences have occurred. Potential unintended consequences include the market adapting and finding new innovative ways to attract young people to their vaping products and HTPs.
430. Another unintended consequence of the policy could be consumers, in particular young people, being deterred from using vapes and HTP but instead switching to other addictive or harmful products such as cigarettes or drugs or taking part in other harmful activities in place of the use of nicotine.
431. Adults could be deterred from using vapes as smoking cessation aids, therefore there is potential for there to be fewer quits and an increase in smoking rate.
432. It could also be considered that there could be an increase in illicit activity as a result of the regulations.

External factors

- Are there any external factors that have influenced the impact of the policy?
433. There are also external factors that could influence the impact of the regulations, for example, compliance. The success of the policy is reliant on compliance from businesses. If non-compliant products are still sold, it is likely young people will still be exposed to brightly coloured devices which may influence their decision to vape or use HTP.
434. Other external factors could include market trends, consumer trends and behaviours and interactions with future government policies. For instance, there could be other regulations that directly or indirectly impact this regulation and the vape and HTP market. These regulations could accelerate or delay the realisation of the benefits of devices regulations. This could make it challenging to distinguish the effects of the pre-market regulations from those of additional future regulations.

Economic and other impacts

- What were the economic impacts of the policy? (this could cover both labour market impacts as well as household impacts such as expenditure on vapes and HTPs).
 - What has been the cost to business of implementing the policy?
 - Has there been any environmental impacts of the policy?
435. The evaluation will likely involve a mix of internal / DHSC resources, commissioned teams via the NIHR, and locally commissioned work. These different sources allow for work to be undertaken flexibly at different times and at appropriate scales.
436. Given the proposed structure of the regulations, it may not be possible for experimental or randomised designs to be used. For example, if policies are

implemented uniformly across nations and all businesses are in scope of the policies, therefore not allowing a control to be established. Therefore, it would be expected that non-experimental observational and cost-effectiveness designs will be used. The evaluation is likely to use a mixed approach influenced by issues such as timelines and data availability. It is also likely that the evaluation will be a multi-phased study or studies given that it is likely to look at multiple regulations implemented across different time periods.

How DHSC will respond to adverse effects and unintended consequences

437. DHSC will engage with industry association bodies, trading standards and public health stakeholders to ensure we mitigate unintended consequences with effective communication and respond to any issues efficiently. DHSC will work closely with local authorities and the regional network to ensure effects are closely monitored in regions.