This publication was withdrawn on 15 November 2024

This impact assessment (IA) has been superseded by the IA for the Tobacco and Vapes Bill 2024 introduced on 5 November 2024.

Department of Health & Social Care

Tobacco and Vapes Bill

Impact assessment

20 March 2024

Introduction

1. Tobacco, and especially cigarette smoking, is the single most important, entirely preventable cause of ill health, disability, and death in this country[1]. Smoking is responsible for around 80,000 deaths in the UK each year:

    - 64,000 deaths per year in England[2]
    - 8,300 deaths per year in Scotland[3]
    - 5,600 deaths per year in Wales[4]
    - 2,200 deaths per year in Northern Ireland[5]

2. Smoking causes harm throughout people's lives, not only for the smoker but for those around them. It is a major risk factor for poor maternal and infant outcomes[6], significantly increasing the chance of stillbirth and can trigger asthma in children. Smoking causes around 1 in 4 of all UK cancer deaths[7] and is responsible for the great majority of lung cancer cases. Smoking is also a major cause of heart disease, stroke, and heart failure, and increases the risk of dementia in the elderly. Smokers lose an average of 10 years of life expectancy, or around 1 year for every 4 smoking years[8].

3. As a result, smoking puts significant pressure on the NHS. In England, almost every minute of every day someone is admitted to hospital because of smoking and up to 75,000 GP appointments could be attributed to smoking each month - equivalent to over 100 appointments every hour[9].

4. Smoking also has wider costs to the economy, including a cost on productivity through smoking related lost earnings, unemployment, and early death. Action on Smoking and Health (ASH) estimate that the total costs of smoking to society in England are over £17 billion, including £14 billion cost to productivity[10].

5. In recent years there has also been a sharp increase in the number of young people that vape. Data from NHS Digital's report, 'Smoking, drinking and drug use among young people in England 2021[11],' showed a recent doubling of regular vape use for 11 to 15 year olds; from 2% in 2018 to 4% in 2021. Analysis by ASH also shows that in Great Britain, current vaping prevalence among 16 to 17 year olds increased from 5% in 2018 to 15% in 2023[12].

[1] PHE. 2021. Health Profile for England 2021.
[2] OHID. Local Tobacco Control Profiles - Data.
[3] The Scottish Public Health Observatory. Tobacco use: smoking attributable deaths.
[4] Public Health Wales. Smoking in Wales.
[5] Department of Health, Northern Ireland. 2020. Ten year tobacco control strategy for Northern Ireland.
[6] NHS. What are the health risks of smoking?
[7] Cancer Research UK. Tobacco statistics.
[8] Royal College of Physicians. 2018. Hiding in plain sight: Treating tobacco dependency in the NHS.
[9] Cancer Research UK. 2023. Ending smoking could free up 75,000 GP appointments each month.
[10] Action on Smoking and Health. 2023. £14bn a year up in smoke – economic toll of smoking in England revealed.
[11] NHS Digital. 2022. Smoking, Drinking and Drug Use among Young People in England, 2021.
[12] Action on Smoking and Health. 2023. Use of e-cigarettes among young people in Great Britain.

6. Although vapes can be an effective tool to help smokers to quit, vaping is never recommended for children and carries risk of future harm and addiction.

7. The active ingredient in most vapes (apart from nicotine-free vapes) is nicotine which, when inhaled, is a highly addictive drug. The addictive nature of nicotine means that a user can become dependent on vapes, especially if they use them regularly. Giving up nicotine can be very difficult because the body has to get used to functioning without it. Withdrawal symptoms can include cravings, irritability, anxiety, trouble concentrating, headaches and other mental and physical symptoms. Nearly half of nicotine users want to quit but cannot[13]. Evidence suggests that in adolescence, the brain is more sensitive to the effects of nicotine, so there could be additional risks for young people than for adults[14].

8. 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 compounds if they are overheated[15].

9. On 4 October 2023, the Department of Health and Social Care (DHSC) published a command paper[16] setting out the proposed action the government will take to protect future generations from the harms of smoking, help existing smokers to quit smoking, reduce the number of young people that vape and strengthen enforcement of illicit and underage sales of tobacco products and vapes.

10. On 12 October 2023, the UK Government and devolved administrations launched an 8-week consultation[17] on the package of legislative proposals announced in the command paper. The consultation closed on 6 December 2023 and the government's response[18] was published on the 29 January 2024, confirming measures to be taken forward as part of the Tobacco and Vapes Bill.

11. The 'Creating a smokefree generation and tackling youth vaping' consultation received 118,756 responses of which 90,835 were identified as fraudulent. 27,921 responses were analysed including from 896 organisations. The consultation asked for views on the smokefree generation policy, youth vaping and enforcement. Not all areas included in the consultation will be included in the Tobacco and Vapes Bill.

12. For the smokefree generation policy, 63.2% of respondents who answered the question agreed that the age of sale for tobacco products should be changed so that anyone born on or after 1 January 2009 will never be legally sold (and also in Scotland, never legally purchase) tobacco products. 32.2% disagreed and 4.6% said that they did not know. When questioned on prohibiting proxy sales, 73.7% of those that responded to the question were in favour, 20.0% did not agree and 6.3% said that they did not know. Respondents were largely in support of changing the warning notices in retail premises with 71.8% in favour, 22.6% disagreeing and 5.6% of the view that they did not know.

[13] ONS. 2023. Adult smoking habits in the UK - Office for National Statistics (ons.gov.uk)
[14] Leslie F. 2020. Unique, long-term effects of nicotine on adolescent brain.
[15] Komura M and others. 2022. Propylene glycol, a component of electronic cigarette liquid, damages epithelial cells in human small airways.
[16] DHSC. 2023. Stopping the start: our new plan to create a smokefree generation - GOV.UK (www.gov.uk)
[17] DHSC. 2023. Stopping the start: our new plan to create a smokefree generation - GOV.UK (www.gov.uk)
[18] DHSC, Department of Health (Northern Ireland), Scottish Government, Welsh Government. 2024. Creating a smokefree generation and tackling youth vaping: government response.

The consultation also asked respondents for their views on the scope of products to be included. 63.8% of question respondents were in favour of the legislation including all tobacco products, cigarette papers and herbal smoking products, 30.7% disagreed and 5.5% said that they did not know.

13. Respondents were asked about policies on reducing youth vaping, for example in relation to restricting flavours, regulating packaging and shop displays. The Bill intends to provide powers to introduce restrictions on vaping in Regulations. Further impact assessments will be developed for any secondary legislation that is implemented using powers created by the Bill. The consultation asked respondents whether non-nicotine vapes should be regulated under a similar regulatory framework as nicotine vapes. 59.6% of respondents who answered the question were in favour of a similar regulatory framework, 32.7% were not in favour and 7.8% did not know.

14. Health policy is a devolved matter in Scotland, Wales, and Northern Ireland. The territorial extent of the powers in the Bill have been discussed with the devolved administrations. The latest position on the extent of each of the powers in the Bill are set out in the ‘Policies’ section of this impact assessment.

Policies

15. The Tobacco and Vapes Bill will protect future generations from the harms of smoking, tackle youth vaping and strengthen enforcement of age of sale legislation for tobacco and vaping products.

16. On tobacco, the Bill will make it an offence for anyone born on or after 1 January 2009 to be sold tobacco products. The Bill will also make it an offence to purchase tobacco products on behalf of someone born on or after 1 January 2009 ('proxy purchasing'). This is the smokefree generation policy.

17. The current age of sale restriction for tobacco products is imposed under the Children and Young Persons Act 1933[19] in England and Wales, the Tobacco and Primary Medical Services (Scotland) Act 2010 in Scotland, and Health and Personal Social Services (Northern Ireland) Order 1978 in Northern Ireland. Under this legislation it is an offence to sell tobacco products to anyone under the age of 18 or purchase them on behalf of anyone under the age of 18.

18. The products in scope of the smokefree generation policy includes all tobacco products (including waterpipe tobacco, such as shisha), cigarette papers, and herbal smoking products would be subject to the new law. All other products, such as vaping products and nicotine products are out of scope of the smokefree generation policy because they do not contain tobacco and are often used as a smoking quit aid.

19. On vaping products and other nicotine products, the Bill brings forward a number of measures to reduce the appeal and availability of such products to children while ensuring such products continue to be available for current adult smokers to help them quit. Specifically, the Bill provides regulation making powers to:

    - Regulate vaping and nicotine product contents and flavours
    - Regulate vaping and nicotine product retail packaging and product requirements; and
    - Regulate displays of vaping and nicotine products.

20. These measures will apply to both nicotine and non-nicotine vaping products, as well as other nicotine products.

21. The scope of this impact assessment, however, is on nicotine and non-nicotine vapes only, and the analysis does not account for other nicotine products at this stage.

22. The Bill will also close regulatory loopholes by:

[19] Children and Young Persons Act 1933 (legislation.gov.uk).

- Prohibiting the sale of non-nicotine vapes to under 18s[20] in England and Wales (and in the case of Northern Ireland, providing a power to do so),

- Prohibiting the distribution of free samples of vaping and nicotine products to under 18s[20] in England and Wales (and in the case of Northern Ireland, providing a power to do so); and

- Providing powers to extend the above two provisions to other nicotine products

23. The Bill also introduces powers in England and Wales for local weights and measures authorities to issue Fixed Penalty Notices (FPNs) to enforce tobacco and vaping product (nicotine and non-nicotine)[20] offences. Powers to issue FPNs will be in addition to existing powers local authorities have to enforce age of sale legislation and will support the enforcement of the smokefree generation policy.

24. The Bill provides powers to extend the notification, reporting and vigilance requirements in the Tobacco and Related Products Regulations 2016 (**TRPR**) to non-nicotine vaping products and nicotine products, including the associated fee requirements. In connection with this the Bill provides a power to amend information to be notified and a power to create exceptions to the duty to publish information under regulation 34 of TRPR.

25. As noted above, some of the tobacco, vaping and nicotine product policies will need to be implemented via secondary legislation using powers in the Bill, at which point, if proportionate, further impact assessment(s) will be completed to assess the costs and benefits of those policies being implemented.

26. The Bill consolidates or replaces certain existing tobacco control legislation related to age of sale and other sale restrictions, and re-enacts with modifications powers to regulate tobacco products, in particular with respect to packaging and flavours. Accordingly, the Bill creates some new criminal penalties whilst replacing other existing penalties as part of that consolidation. Consolidating existing legislation serves an important function in helping to ensure that the law is effectively interpreted, applied and enforced. Where there are no substantial policy changes arising from the consolidation and re-enactment of existing legislation, the impact of those measures have not been considered in this impact assessment.

Territorial extent of the Bill

27. The countries that the powers in the Bill will apply to varies between the different policies.

28. Table 1 sets out the expected position on the territorial extent of each measure in the Bill.

[20] Already encompassed in Scotland by the Tobacco and Primary Medical Services (Scotland) Act 2010.

Table 1: Territorial extent of powers in the Bill

Policy	**Territorial extent**
Tobacco	
Change the legal age of sale so it is an offence to sell tobacco products to anyone born on or after 1 January 2009	United Kingdom
Amend proxy sale legislation to align with the new age of sale	United Kingdom
Amend warning notice requirements in retail premises to align with the new age of sale	United Kingdom
Vaping	
Power to restrict the flavours of nicotine and non-nicotine vapes and other nicotine products	United Kingdom *UK wide powers*
Power to regulate point of sale displays for nicotine and non-nicotine vapes and other nicotine products	United Kingdom *Includes powers for each UK nation to regulate independently*
Power to regulate the packaging and product presentation of nicotine and non-nicotine vapes and other nicotine products	United Kingdom *UK wide powers*
Stop the free distribution of nicotine and non-nicotine vapes to children	England and Wales[21] *Includes a power for Northern Ireland to implement via secondary legislation*
Introduce age of sale restrictions for non-nicotine vapes	England and Wales[22] *Includes a power for Northern Ireland to implement via secondary legislation*
Power to extend free distribution prohibitions and age of sale restrictions to other nicotine products	England, Wales & Scotland Northern Ireland (limited to a power to prohibit free distribution only)

[21] These powers already exist in Scotland, but are being amended to include other nicotine products.
[22] These restrictions already apply in Scotland.

Policy	Territorial extent
Enforcement	
Create fixed penalty notices (FPNs) for underage sales of tobacco and vaping product offenses	England and Wales[23]
Notification requirements etc for vaping and other nicotine products	
Extension of notification requirements	United Kingdom
Power to amend information to be notified	United Kingdom
Exceptions to publication	United Kingdom

[23] The Scotland and Northern Ireland Governments already have these powers.

Interaction between policies

30. The impact assessments in the subsequent sections of this document consider the costs and benefits of each policy in isolation. However, we recognise that they will interact with each other.

31. There is limited evidence on how the different policies will interact with each other. How they interact will also depend on the detail of future secondary legislation to regulate vapes using powers in the Bill.

32. Further impact assessments will be developed to accompany any secondary legislation that is implemented using powers created by the Bill. Those impact assessments will consider if there is new evidence available to estimate how the policies will interact with each other.

33. At this stage we have provided a qualitative assessment of how the policies might interact.

Smokefree generation

34. Raising the age of sale for tobacco products year on year will mean that over time, an ever-decreasing proportion of the population will be able to be sold tobacco products. Without access to tobacco products, it is possible that more people could be encouraged to vape or try other nicotine products, such as nicotine pouches.

35. As the policies on vapes are intended to restrict the promotion and in turn use of these products by young people, we would expect these policies to mitigate this potential unintended consequence at least partially.

Vaping policies

36. The vaping policies included in the Bill all have the same objective of reducing the number of children that vape. Therefore, these policies should be seen as mutually reinforcing and have a larger impact on youth vaping rates, compared to if just one of them was introduced.

37. However, we realise that the total impact on youth vaping rates is likely to be less than the sum of the individual policies, as the policies will be targeting the same group of people.

38. A possible unintended consequence of the vaping policies is that it could encourage more young people to try smoking. For example, a study from the US found that restricting flavours of vapes led to an additional 15 cigarettes sold for every 0.7mL vape pod not sold[24].

[24] Friedman and others. 2023. E-cigarette Flavor Restrictions' Effects on Tobacco Product Sales.

39. The smokefree generation policy, additional investment announced by the Prime Minister on 4 October 2023[25] and other recent tobacco control policy announcements are expected to mitigate this potential unintended consequence at least partially. The investment includes an additional £70 million per year to support local authority-led stop smoking services and £15 million per year for new national campaigns which will include communicating the benefits of quitting and the support available[26]. Also, in April 2023, several other tobacco control policies were announced[27]. This included a national 'swap to stop' scheme, which will offer a million smokers across England a free vaping starter kit and funding for financial incentives for all pregnant smokers to encourage them to quit.

[25] DHSC. 2023. Stopping the start: our new plan to create a smokefree generation - GOV.UK (www.gov.uk)

[26] The allocation of funding in Scotland, Wales and Northern Ireland is the responsibility of relevant ministers in those countries.

[27] DHSC and Neil O'Brien MP. 2023. Minister Neil O'Brien speech on achieving a smokefree 2030: cutting smoking and stopping kids vaping - GOV.UK (www.gov.uk)

Impact assessments

40. The following sections include impact assessments for the smokefree generation and vaping policies included in the Bill. The section on the vaping policies assesses the impacts of restricting vape flavours, regulating vape packaging and product presentation, and regulating point of sale displays for vapes.

41. For the smokefree generation policy, we have provided an estimated Net Present Value (NPV) and Equivalent Annual Net Direct Cost to Business (EANDCB). Based on Regulatory Policy Committee (RPC) guidance on the assessment and scoring of primary legislation measures[28], the assessment of the impacts of the smokefree generation policy is in Scenario 1.

42. It has not been possible to provide the same level of assessment for the vaping policies at this stage.

43. For the vaping policies we have only been able to provide indicative estimates for a limited number of costs and benefits. As a result, we have not provided a NPV and EANDCB for them at this stage. Using RPC guidance, our assessment of these policies is in Scenario 2. Impact assessments (including NPV and EANDCB assessments) will be developed in advance of secondary legislation being brought forward to implement policy changes using these powers.

44. We expect that the prohibition of the sale of non-nicotine vapes to under 18s, the prohibition of the distribution of free samples of vapes to under 18s and Fixed Penalty Notices (FPNs) for underage tobacco, vape and other consumer nicotine product sales will have limited impacts, particularly on businesses. Given this, we have provided a proportionate assessment of the potential impacts of these policies and demonstrated why we do not expect them to have a significant impact on businesses.

45. Due to these differences in the level of assessment of the different policies we have not provided an overall NPV and EANDCB for the entire Bill.

46. The assessments of each policy reflect the latest position on the territorial extent of the powers in the Bill, set out above in Table 1.

[28] Regulatory Policy Committee. 2019. RPC case histories: assessment and scoring of primary legislation measures.

Smokefree generation

47. This section contains the impact assessment for the smokefree generation policy.

48. For the smokefree generation policy, we have provided an estimated Net Present Value (NPV) and Equivalent Annual Net Direct Cost to Business (EANDCB). Based on Regulatory Policy Committee (RPC) guidance on the assessment and scoring of primary legislation measures[29], the assessment of the impacts of the smokefree generation policy is in Scenario 1.

49. The modelling for the smokefree generation policy only estimates the impact of implementing the policy in England. However, as described above, the policy is intended to cover the whole of the United Kingdom. In this section, the costs and benefits are presented for England as well as an estimate for the UK. The NPV and EANDCB are for the United Kingdom.

50. Also, as the new legislation will apply from 1 January 2027, all current prices have been adjusted to 2027 prices using GDP deflators[30].

[29] Regulatory Policy Committee. 2019. RPC case histories: assessment and scoring of primary legislation measures.
[30] HMT. 2014. GDP deflators at market prices, and money GDP.

Title: Raising the legal age of sale for tobacco products **IA No:** 9616	Impact Assessment (IA)
RPC Reference No: 5316(1)	**Date:** November 2023
Lead department or agency: Department of Health and Social Care	**Stage:** Final
Other departments or agencies:	**Source of intervention:** Domestic
	Type of measure: Primary legislation
	Contact for enquiries: tobaccocontrol@dhsc.gov.uk

Summary: Intervention and Options

RPC Opinion: Awaiting scrutiny

Cost of Preferred (or more likely) Option (in 2019 prices)			
Total Net Present Social Value	**Business Net Present Value**	**Net cost to business per year**	**Business Impact Target Status** Qualifying provision
£18,584.7m	-£1,913.5m	£100.5m	502.6

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

Tobacco use remains one of the most significant challenges to public health across the country and is the leading cause of premature death in England. The evidence shows that a large majority of smokers start at a young age. Although a high proportion of people want to quit smoking, it can be very challenging due to the addictive nature of nicotine. Evidence also shows that people who start smoking as teenagers have higher levels of nicotine dependence compared to those starting over 21 and are less likely to make a quit attempt and successfully quit. As a result, the government is taking action to prevent future generations from ever taking up smoking and getting smoking prevalence to 0% in the long-term. In doing so, they will not have their choices taken away by addiction to nicotine and the significant and negative externalities of smoking will be reduced.

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

The objectives of the smokefree generation policy is to improve public health by continuing the downward trajectory and get smoking rates to 0%. The government wants to prevent future generations from ever taking up smoking while not making it illegal for those who currently smoke to continue to do so.
The intended outcomes would be a reduction in the number of people taking up smoking in the short-term and getting smoking prevalence to 0% in the long-term. Indicators of success could include a reduction in the number of young people smoking and a reduction in overall smoking prevalence.

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

Option 1: Do nothing
Option 2: Introduce legislation to make it an offence for anyone born on or after 1 January 2009 to be sold tobacco products. This option would mean over time an increasing proportion of the population will be unable to be sold tobacco products, effectively increasing the legal age of sale until no one can be sold tobacco.

Will the policy be reviewed? It will be reviewed. **If applicable, set review date:** January 2032

Is this measure likely to impact on international trade and investment?		No		
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: Andrea Leadsom Date: 18 March 2024

Summary: Analysis & Evidence

Policy Option 2

Description:

FULL ECONOMIC ASSESSMENT

Price Base Year 2019	PV Base Year 2020	Time Period Years	Net Benefit (Present Value (PV)) (£m)		
			Low: Optional	**High:** Optional	**Best Estimate:** 18,584.7

COSTS (£m)	Total Transition (Constant Price)	Years	Average Annual (excl. Transition) (Constant Price)	Total Cost (Present Value)
Low	Optional		Optional	**Optional**
High	Optional		Optional	**Optional**
Best Estimate	5.9		121.0	**1,913.5**

Description and scale of key monetised costs by 'main affected groups'

Appraisal period is 30 years from the date of implementation (1 January 2027). The reduction in tobacco consumption over 30 years is expected to reduce profits for tobacco retailers by £2,291m, and for tobacco wholesalers by £506m. Tobacco retailers also expected to incur familiarisation costs of £9m, costs due to increased time to check people's IDs of £117m and costs to put up new signage in shops of £0.2m. These costs are in 2027 prices.

Other key non-monetised costs by 'main affected groups'

If this policy leads to more people attempting to quit smoking, it could lead to additional people using local stop smoking services, which would impose a cost on local authorities.
The policy could also lead to an increase in the number of people that are checked for ID when purchasing tobacco, which could lead to an increase in aggression and abuse towards retail workers.

BENEFITS (£m)	Total Transition (Constant Price)	Years	Average Annual (excl. Transition) (Constant Price)	Total Benefit (Present Value)
Low	Optional		Optional	**Optional**
High	Optional		Optional	**Optional**
Best Estimate			683.3	**20,498.2**

Description and scale of key monetised benefits by 'main affected groups'

Appraisal period is 30 years from the date of implementation (1 January 2027). Expected benefits are the health benefits that would accrue from the reduction in the number of people taking up smoking, resulting in monetised QALYs gains from fewer deaths of £480m. There will also be wider societal benefits: productivity gains of £24,588m, reduced healthcare usage costs of £3,263m, reduced social care usage costs of £1,955m, and reductions in fire costs associated with smoking of £1,029m.

Other key non-monetised benefits by 'main affected groups'

Reductions in disease cases of lung cancer, stroke, CHD and COPD as a result of fewer smokers.
There could also be health benefits in terms of reduced morbidity and mortality due to reduced second hand smoke exposure.
There could also be benefits in the form of reduced litter due to fewer smokers.

Key assumptions/sensitivities/risks	Discount rate (%)	1.5%/3.5%

Assumptions: The estimated effect size in our central scenario is based on feedback from expert stakeholders on the most likely size of the impact based on different scenarios that we presented to them. The majority of the estimated costs and benefits are based on the assumed size of the effect of this policy. The estimated costs and benefits for the UK are based on the estimates for England, scaled to include Wales, Scotland, and Northern Ireland based on population sizes.
Sensitivity: The effect the policy would have on smoking instigation rates.
Discount rate: 1.5% for health impacts, 3.5% for monetised impacts.

BUSINESS ASSESSMENT (Option 2)

Direct impact on business (Equivalent Annual) £m:			Score for Business Impact Target (qualifying provisions only) £m:
Costs: 100.5	**Benefits:** 0	**Net:** 100.5	502.6

Evidence Base

Problem under consideration and rationale for intervention

51. In 2022, adult smoking prevalence in the UK was 12.9% (around 6.4 million people) and in England was 12.7%, (around 5.3 million adults)[31]. Smoking is the single leading cause of preventable illness and death in England[32] and has a significant impact on a person's health throughout their life.

52. Smoking is a significant risk for poor pregnancy-associated health outcomes. Women who smoked during pregnancy were 2.6 times more likely to give birth prematurely[33]. These babies were more likely to have a lower birth weight and were 4.1 times more likely to be small-for-date babies[34]. Smoking increases the risk of birth defects which can result in poorer health outcomes later in life. In areas with the highest smoking rates, in high income countries, up to 20% of stillbirths may be caused by smoking[35].

53. Smoking also significantly increases the risk of non-communicable diseases, particularly cancer, respiratory disease, and circulatory disease[36]. It is estimated that up to two-thirds of smokers die of smoking[37] and those who start smoking as a young adult lose an average of 10 years of life expectancy[38]. In the UK, around 80,000 deaths are attributable to smoking, including about:

- 64,000 deaths per year in England[39]
- 8,300 deaths per year in Scotland[40]
- 5,600 deaths per year in Wales[41]
- 2,200 deaths per year in Northern Ireland[42]

54. Later in life, it is estimated that smokers also need care on average 10 years earlier than they would otherwise have[43] - often while still of working age.

55. It is estimated that smokers are also 1.6 times more at risk of dementia[44], including Alzheimer's and vascular dementia, and 14% of dementia cases can be attributed to smoking internationally[45].

[31] ONS. 2023. Adult smoking habits in the UK - Office for National Statistics (ons.gov.uk)
[32] OHID. 2021. Health Profile for England 2021..
[33] Selvaratnam and others. 2023. Risk of premature birth from smoking while pregnant more than double previous estimates.
[34] Selvaratnam and others. 2023. Risk of premature birth from smoking while pregnant more than double previous estimates.
[35] Flenady and others. 2011. Major risk factors for stillbirth in high-income countries: a systematic review and meta-analysis.
[36] OHID. 2022. Smoking and tobacco: applying All Our Health.
[37] Banks E and others. 2015. Tobacco smoking and all-cause mortality in a large Australian cohort study: findings from a mature epidemic with current low smoking prevalence.
[38] Royal College of Physicians. 2018. Hiding in plain sight: Treating tobacco dependency in the NHS.
[39] OHID. Local Tobacco Control Profiles: Smoking attributable mortality (new method). Directly standardised rate - per 100,000.
[40] Scottish Public Health Observatory. Smoking attributable deaths.
[41] Public Health Wales Observatory. Smoking in Wales.
[42] Department of Health, Social Services and Public Safety. Ten year tobacco control strategy for Northern Ireland.
[43] Action on Smoking and Health. 2021. The cost of smoking to the social care system.
[44] Livingston et al. 2020. Dementia prevention, intervention, and care: 2020 report of the Lancet Commission - The Lancet
[45] Barnes. 2011. The Projected Impact of Risk Factor Reduction on Alzheimer's Disease Prevalence - PMC (nih.gov)

56. There are wide health disparities, socioeconomic and geographical, in England. There is an almost 19 year gap in healthy life expectancy between the most and least affluent areas. People in the most deprived areas, or living in relative deprivation, get multiple long-term health conditions 10 to 15 years earlier than in the least deprived areas, and spend more years in ill health[46].

57. Smoking is one of the most important preventable causes of disparities in health and a significant contributor to the gap in life expectancy[47]. For some conditions, such as lung cancer and severe Chronic Obstructive Pulmonary Disease (COPD), smoking is the main driver and for others, such as premature cardiovascular disease (CVD), smoking is a major factor. Reducing smoking rates is therefore one of the biggest single health interventions that we can make to level up the nation[48].

58. Smoking prevalence is also higher among certain populations, for example:

- Age: In the UK, prevalence is higher among those who are younger (16.3% of 25 to 34 year olds) compared with those who are older (8.3% of those aged 65 and over)[49].

Table 2: Smoking prevalence by age

Age group	Smoking prevalence (2022)
18 to 24	11.6
25 to 34	16.3
35 to 44	14.5
45 to 54	14.3
55 to 64	13.6
65+	8.3

- Ethnicity: In the UK, prevalence is higher among people with a mixed ethnic background (16.5%)[50].

Table 3: Smoking prevalence by ethnicity

Ethnicity	Smoking prevalence (2022)
White	13.4
Mixed	16.5
Asian	7.3
Chinese	4.6
Black	8.3
Other	13.9

[46] Barnett and others. 2012. Epidemiology of multimorbidity and implications for health care, research, and medical education: a cross-sectional study.
[47] PHE. 2021. Health Profile for England 2021.
[48] UKHSA. 2018. Health Matters: Stopping smoking - what works?
[49] ONS. 2023. Adult smoking habits in the UK.
[50] ONS. 2023. Adult smoking habits in the UK.

- Deprivation: In England, prevalence in the most deprived decile of LAs is higher (16.4%) compared with the least deprived decile of LAs (10.3%)[51].

Table 4: Smoking prevalence by deprivation decile

Deprivation decile (IMD2019)	Smoking prevalence (2022)
Most deprived decile	16.4%
Second most deprived decile	14.5%
Third more deprived decile	12.1%
Fourth more deprived decile	14.9%
Fifth more deprived decile	12.7%
Fifth less deprived decile	12.4%
Fourth less deprived decile	10.7%
Third less deprived decile	10.6%
Second least deprived decile	9.4%
Least deprived decile	10.3%

- Socioeconomic group: In the UK, prevalence is highest among people in routine and manual occupations (22.8%), while it is lowest among people in managerial and professional occupations (8.3%)[52].

Table 5: Smoking prevalence by socio-economic classification

Socio-economic classification	Smoking prevalence (2022)
Managerial and professional occupations	8.3
Intermediate occupations	14.6
Routine and manual	22.8
Never worked, long-term unemployed	16.8

- Housing tenure: In the UK, prevalence is highest among people that rent from local authority or housing association (26.8%), while it is lowest among people that own outright (7.4%) or own with a mortgage (8.9%)[53].

Table 6: Smoking prevalence by housing tenure

Housing tenure	Smoking prevalence (2022)
Owns outright	7.4
Owns with mortgage	8.9
Rents: local authority or housing association	26.8
Rents: privately	19.2

[51] OHID. Local Tobacco Control Profiles: Smoking prevalence by deprivation deciles.
[52] ONS. 2023. Adult smoking habits in the UK: 2022.
[53] ONS. 2023. Adult smoking habits in the UK: 2022.

59. Smoking also places a significant cost on society. Action on Smoking and Health (ASH) estimates that the total costs of smoking in England are over £17 billion[54]. This includes a £14 billion loss to productivity per year through smoking related lost earnings, unemployment, and early death, as well as costs to the NHS and social care sector of £1.9 billion and £1.1 billion, respectively.

60. In terms of the burden on the NHS, it is estimated that in 2019 to 2020, 448,031 NHS hospital admissions were attributable to smoking[55]. Cancer Research UK (CRUK) analysis also estimates that up to 75,000 GP appointments could be attributed to smoking each month - equivalent to over 100 appointments every hour[56].

61. The health impacts of smoking also place a burden on social care. Analysis by ASH estimates that smokers need care on average 10 years earlier than they would otherwise have[57] - often while still of working age.

62. Data over the last 5 years shows most smokers want to quit[58]. However, in 2022, only 37% of smokers tried to quit and 26% of those reporting making a quit attempt successfully quit[59]. Three-quarters of smokers would never have started if they had the choice again[60]. It is much easier never to start than to have to quit.

63. In general, attempts to stop smoking are accompanied by powerful urges to smoke (cravings) which are a major source of relapse and occur despite the individual concerned wanting to remain abstinent. Cravings overpower and undermine resolve not to smoke. These cravings make it particularly difficult to quit unaided using willpower alone. For example, evidence shows that 95% of unsupported quit attempts end in relapse within a year[61]. Smokers are more likely to successfully quit smoking if quit attempts are supported, such as with nicotine replacement therapies (NRT) or vapes and behavioural support. For example, smokers that use a local stop smoking service are three times as effective in making a successful quit attempt compared to making an unaided quit attempt[62].

64. These problems present examples of the difference between what smokers would prefer to do and what they are actually able to do with respect to tobacco consumption.

65. The great majority of smokers start at a young age, with 66% starting before the age of 18 and 83% before the age of 20[63]. People who start smoking under the age of 18 have higher levels of nicotine dependence compared to those starting over 21[64], and are less likely to make a quit attempt and successfully quit.

[54] Action on Smoking and Health. 2023. £14bn a year up in smoke – economic toll of smoking in England revealed.
[55] OHID. Local Tobacco Control Profiles: Smoking attributable hospital admissions (new method). This indicator uses new set of attributable fractions, and so differ from that originally published.
[56] Cancer Research UK. 2023. Ending smoking could free up 75,000 GP appointments each month.
[57] Action on Smoking and Health. 2021. The cost of smoking to the social care system.
[58] ONS. 2023. Adult smoking habits in the UK Statistical bulletins.
[59] University College London. Top line findings from the Smoking Toolkit Study.
[60] PHE. 2021. –Smokers encouraged to take part in Stoptober, as they report smoking more during pandemic.
[61] Hughes JR, Keely J, Naud S,. 2004. Shape of the relapse curve and long-term abstinence among untreated smokers
[62] National Centre for Smoking Cessation and Training. Stop smoking services: increased chances of quitting.
[63] PHE. 2015. Health matters: smoking and quitting in England.
[64] Ali et al. 2020. Peer Reviewed: Onset of Regular Smoking Before Age 21 and Subsequent Nicotine Dependence and Cessation Behavior Among US Adult Smokers - PMC (nih.gov)

66. A key factor in predicting why some young people are more likely to take up smoking compared to others is if people in their social network smoke. Evidence suggests that young people whose parents smoke could be three or even four times more likely to smoke than young people of non-smoking households[65, 66]. In addition, a study based on data from the UK Millennium Cohort Study[67] found smoking uptake among 14 to 17 year olds was more common if their caregivers or friends smoked.

67. Social norms can have positive as well as negative effects. Research from the US[68] has found that pervasive smoking among peer groups is strongly associated with susceptibility to initiate smoking among non-smokers, and conversely, low rates of smoking is associated with readiness to quit among smokers.

68. As a result, tobacco use remains one of the most significant challenges to public health in this country, and further action is required to reduce the uptake of smoking by young people. In doing so, they will not have their choices taken away by addiction to nicotine, and the negative externalities of smoking will be reduced.

69. Raising the legal smoking age by one year each year until it applies to the whole population was a specific recommendation in *The* Khan *Review: making smoking obsolete*[69] to reduce the number of people that take up smoking.

70. There is also public support for raising the legal age of sale for smoking by one year each year. A survey by YouGov found 71% of adults in Great Britain support this policy[70].

Evidence

Evidence for incremental age increases on age of sale

71. The policy option to raise the legal age for smoking by one year every year to create a smokefree generation has not yet been implemented anywhere else in the world.

72. In January 2023, New Zealand introduced the Smokefree Environments and Regulated Products (Smoked Tobacco) Amendment Act. This included three new policies to reduce smoking rates:

- ‘Smokefree Generation’ policy: changing the age of sale. A ban on selling tobacco products to anyone born in or after 1 January 2009.

- Licensing: reducing the number of retailers that could sell tobacco. A maximum of 600 retail premises would be allowed to sell smoked tobacco products (down from 6,000 – a 90% reduction).

[65] Turner-Warwick M. 1992. Smoking and the Young: A report of a working party of the Royal College of Physicians.
[66] DHSC. 2021. Children whose parents smoke are 4 times as likely to take up smoking themselves.
[67] Vrinten and others. 2022. –Risk factors for adolescent smoking uptake: Analysis of prospective data from the UK Millennium Cohort Study.
[68] Roberts and others. 2015. Adolescent Social Networks: General and Smoking-Specific Characteristics Associated With Smoking.
[69] Dr Javed Khan OBE. 2022. The Khan Review: Making smoking obsolete.
[70] YouGov. 2023. Would you support or oppose raising the legal smoking age by one year each year, effectively making it so that smoking is illegal for those born on 1 January 2009 or later?

- Denicotinisation: reducing the amount of nicotine in tobacco products. Implementing an 0.8 mg/g limit on nicotine content in tobacco products (compared to approximately 15 to 16mg/g of nicotine in full strength cigarettes).

73. The licensing and denicotinisation policies have implications for existing smokers as it limits their ability to access their preferred products, and on retailers.

74. The Smokefree Generation policy meant New Zealand became the first country in the world to introduce a restriction on the sale of tobacco to anyone born after a specified date, as part of its Smokefree 2025 Action Plan[71]. This policy to reduce smoking made it an offence to sell smoked tobacco products to anyone born on or after 1 January 2009, first taking effect in January 2027, when those born in 2009 will start turning 18 years old. This policy has no impact on existing smokers, compared to the licensing and denicotinisation policies which limits their ability to access their preferred products, and on retailers.

75. However, in November 2023, New Zealand's new government announced that it planned to repeal this legislation[72].

76. Despite this change in policy, the decision to implement in the first place was supported by modelling that estimated the impact of a smoke free generation on smoking prevalence.

77. Unpublished modelling, commissioned by the Ministry of Health, were included in New Zealand's regulatory impact statement[73]. The modelling estimated the impact of a smoke free generation on smoking prevalence. Modelling results showed a smoke free generation would have a relatively small impact on smoking prevalence in the initial years of the policy, but assuming full compliance (uptake rates are 0% from implementation), the policy could halve smoking prevalence in New Zealand within 10 to 15 years of implementation.

78. Similarly, a modelling study published in 2018[74] also estimated that a smokefree generation would halve smoking prevalence by 2025 (14 years after implementation) in New Zealand for those aged under 45 years, compared to business as usual, but not for older ages. This modelling also assumed full compliance: uptake rates are 0% from implementation.

79. Further modelling was also commissioned by the New Zealand Government to provide further estimations[75] on the impact of the new policies introduced as part of the Smokefree 2025 Action Plan. The previous simulation model was expanded upon to enhance its capabilities, which included a model to simulate population smoking and vaping behaviours. The new model, named Scalable Health Intervention Evaluation

[71] New Zealand Government: Ministry of Health. 2021. Smokefree Aotearoa 2025 Action Plan.
[72] BBC. 2023. New Zealand smoking ban: Health experts criticise new government's shock reversal.
[73] New Zealand Government: Ministry of Health. 2021. Regulatory Impact Statement: Smokefree Aotearoa 2025 Action Plan.
[74] van der Deen and others. 2018. Impact of five tobacco endgame strategies on future smoking prevalence, population health and health system costs: two modelling studies to inform the tobacco endgame.
[75] Ouakrim and others. 2023. Tobacco endgame intervention impacts on health gains and Māori:non-Māori health inequity: a simulation study of the Aotearoa/New Zealand Tobacco Action Plan.

(SHINE), was then used to assess the impact of the New Zealand Government's Smokefree 2025 action plan, including the smokefree generation, on smoking prevalence, mortality, and health-adjusted life year (HALY). This model took into consideration that social supply was likely and did not assume full compliance. It was assumed that uptake rates were 10% of business as usual 10 years after the policy s introduced.

80. The results of this study also showed a smokefree generation would have a relatively small impact on smoking prevalence in the initial years, but on its own could achieve a 5% smoking prevalence for all population groups from at least 2040 onwards.

81. In addition, the model estimated that 209 (95% UI: 159 to 258) premature deaths would be averted (deaths occurring before 75 years) in all population groups from 2020 to 2050, a 0.01% reduction compared with business as usual (1,497,389 premature deaths)[76]. The majority (84%) of the deaths averted were estimated to be after 2040: from 2040 to 2050, 175 premature deaths were estimated to be averted.

82. Similarly, it was estimated that the majority (98%) of HALYs gained were after 2040, with 1,318 HALYs gained between 2020 to 2040 and 74,200 gained between 2041 to 2131. This further highlights the long-term impacts of a smokefree generation. By focusing on young people, the overall health benefits become greater over time, as early intervention and the avoidance of youth initiation contributes to reducing the prevalence of smoking-related health issues in the whole population, as those generations get older.

83. There have been a further two studies that have modelled the impact of implementing a policy to create a smokefree generation, including studies for Singapore[77] and Solomon Islands[78]. The results were similar to the New Zealand modelling, and the projections supported that a smokefree generation is estimated to reduce smoking prevalence and increase health gains in the long-term.

84. The modelling results from Singapore found that a smokefree generation has one of the greatest projected long-term impacts (over 50 years) in reducing the prevalence of cigarette users and combined prevalence of cigarette users and vape users. Additionally, it was found that the smokefree generation scenario would achieve the greatest health benefits (in terms of QALY gains) over the 50 years projected, with a steep rise in health benefits after 20 years of implementation. This was in comparison to eleven other policy scenarios including: increasing the minimum legal age, two tax scenarios where tax is raised at differing increments, three scenarios reflecting the effects of introducing vapes into the Singapore Market, and 6 further scenarios reflecting differing combinations of all policies explored.

[76] Ouakrim and others. 2023 Tobacco endgame intervention impacts on health gains and Māori:non-Māori health inequity: a simulation study of the Aotearoa/New Zealand Tobacco Action Plan. [Supplementary Material]
[77] Doan and others. 2019. Evaluating smoking control policies in the e-cigarette era: a modelling study.
[78] Singh and others. 2020. Impact of tax and tobacco-free generation on health-adjusted life years in the Solomon Islands: a multistate life table simulation.

85. The modelling study estimating the impact of a smokefree generation implemented in the Solomon Islands projected that the policy would not achieve the countries aim of being smoke free in 2025. However, results did show that the policy would achieve a greater reduction in prevalence over the projected 20 years than business as usual. The study found that about 8% of the health gains estimated from a smokefree generation policy are likely realised in the first 20 years after initiation, with the remainder occurring at least 20+ years into the future.

Evidence for raising the age of sale

86. There is evidence that raising the legal age of sale for tobacco is effective at reducing youth smoking prevalence.

87. In 2007, the legal age of sale for tobacco in England, Wales and Scotland was increased from 16 to 18 years old. Evidence shows that this increase in the legal age of sale for tobacco did reduce smoking prevalence among young people in England, both in the short-term[79, 80] and the long-term[81].

88. Both studies looking into the short-term impacts concluded that there were immediate falls in the prevalence of youth smoking following the increase in the age of sale. The study by UCL published in 2010 found that following the increase in the legal age of sale of tobacco to 18 years, smoking prevalence declined across all age groups. However, the largest decrease was seen among 16 to 17 year olds, with prevalence reducing by nearly 30% following the increase in the age of sale. For comparison, prevalence only declined by around 11% among 18 to 24 year olds.

89. In addition to reporting the short-term reductions in youth smoking, the study by Millet and others in 2011 found that the increase in age of sale had a similar impact in different socio-economic groups.

90. In 2020, UCL also published a study that assessed the long-term impacts of the increase in the age of sale of tobacco from 16 to 18. The study found that rates of ever-smoking[82] declined more among 16 and 17 year olds compared to 18 to 24 year olds. They reported that for every post-implementation month, the odds of ever smoking were around 0.3% lower for those aged 16 and 17 compared to 18 to 24 year olds. Thus, this equates to a difference in odds of about 5.4% and 14.4% over 18 months and 48 months post implementation, respectively.

91. There is also evidence from other countries on the impact of raising the legal age of sale. In 2019, the legal age of sale for tobacco was raised from 18 to 21 in all states in the US and named the tobacco 21 policy (T21) [83].

[79] Fidler and West. 2010. Changes in smoking prevalence in 16–17-year-old versus older adults following a rise in legal age of sale: findings from an English population study.
[80] Millet and others. 2011. Increasing the age for the legal purchase of tobacco in England: impacts on socio-economic disparities in youth smoking.
[81] Beard and others. 2020. Long-term evaluation of the rise in legal age-of-sale of cigarettes from 16 to 18 in England: a trend analysis.
[82] A person was defined as an ever smoker if they either smoked cigarettes (including hand-rolled) every day; smoked cigarettes (including hand-rolled), but not every day; did not smoke cigarettes at all but did smoke tobacco of some kind (such as pipe or cigar); stopped smoking completely in the last year; stopped smoking completely more than a year ago.
[83] U.S. Food and Drug Administration. Tobacco 21.

92. Prior to the implementation of T21, the Institute of Medicine (IoM) conducted an expert elicitation process to estimate the impact raising the age of sale from 18 to 19, 21 and 25 would have on smoking instigation rates for the US population[84]. The committee estimated that raising it by one year to 19 would reduce smoking instigation rates by 10% for the four age groups closest to the new minimum legal age (15 to 18 year olds) and by 5% for all people younger (ages 14 and under). The committee also assumed a 'rebound effect,' meaning a delay in instigation to a later age.

93. There are now also multiple studies from the US looking at the impact T21 has had. The first two states to implement T21 state-wide in the US were California and Hawaii. Findings from a study[85] that evaluated the legal age increase indicated that the implementation of state-wide T21 policies was associated with a 13.1% reduction in monthly sales of cigarette packs in California and an 18.2% reduction in Hawaii, relative to the mean number of monthly packs sold before the implementation of T21. Results from another study[86] also found that after implementing T21 in Hawaii the average monthly cigarette unit sales dropped significantly by 4.4% in large convenience stores. However, neither study provided information on the age of tobacco purchasers.

94. Further states began to implement T21, and a US study from 2019[87] looked at the difference in the odds of smoking for 18 to 20 year olds that had, and had not, been exposed to age of sale legislation. The study found that individuals aged 18 to 20 years in places where the legal age of sale was 21 were 39% less likely participate in smoking compared to 21 and 22 year olds.

95. These findings are further supported by studies based on data from Needham, Massachusetts[88],Cleveland, Ohio[89], and the states of Oregon[90], Minnesota[91], and California[92,93], which reported a reduction in tobacco use amongst the youth population once the T21 legislation was introduced. The findings are also supported by similar studies that examine the effect of the T21 policy on multiple areas in the US within a youth population[94,95,96,97,98].

[84] Institute of Medicine. 2015. The Effect on Tobacco Use of Raising the Minimum Age of Legal Access to Tobacco Products - Public Health Implications of Raising the Minimum Age of Legal Access to Tobacco Products.
[85] Ali and others. 2020. Tobacco 21 policies in California and Hawaii and sales of cigarette packs: a difference-in-differences analysis.
[86] Glover-Kudon and others. 2020. Cigarette and cigar sales in Hawaii before and after implementation of a Tobacco 21 Law.
[87] Friedman and others. 2019. Tobacco-21 laws and young adult smoking: quasi-experimental evidence.
[88] Schneider and others. 2016. Community reductions in youth smoking after raising the minimum tobacco sales age to 21.
[89] Trapl and others. 2022. Evaluation of Restrictions on Tobacco Sales to Youth Younger Than 21 Years in Cleveland, Ohio, Area.
[90] Oregon Health Authority. 2019. Oregon's Tobacco 21 Law: Impact Evaluation.
[91] Minnesota Department of Health. 2022. SHIP Supports local Tobacco 21 policies, helping to reduce youth commercial tobacco use.
[92] Dove and others. 2021. Smoking behavior in 18–20 year-olds after tobacco 21 policy implementation in California: A difference-in-differences analysis with other states.
[93] Sax and Doran. 2022. Evaluation of Risk Perception of Smoking after the Implementation of California's Tobacco 21 Law.
[94] Abouk and others. 2023. Estimating the Effects of Tobacco-21 on Youth Tobacco Use and Sales.
[95] Friedman and Wu. 2020. Do Local Tobacco-21 Laws Reduce Smoking Among 18 to 20 Year-Olds?
[96] Agaku and others. 2022. A Rapid Evaluation of the US Federal Tobacco 21 (T21) Law and Lessons From Statewide T21 Policies: Findings From Population Level Surveys.
[97] Colston and others. 2022. Tobacco 21 laws may reduce smoking and tobacco-related health disparities among youth in the U.S.
[98] Hansen and others. 2022. Do State Tobacco 21 Laws Work?

96. However, results from a study published in 2023 that looked at a nationally representative population of the US found no association between T21 policy exposure and cigarette use within youth and young adults (ages 15 to 21 years)[99]. However, authors hypothesised that this is likely to be linked to the fact that the average age of smoking initiation has increased in the US in the past two decades. This is related to evidence[100] that shows that currently a higher proportion of cigarette smokers are initiating cigarette use in early adulthood (ages 18 to 23 years) versus adolescence (age <18 years).

97. Furthermore, two studies[101,102] that found that T21 did not reduce cigarette smoking for all age groups studied reported that it may be linked to a poor compliance with T21 regulations by tobacco retailers at the point of sale, as identified by four other studies[103,104,105,106].

[99] Patel and others. 2023. Measuring the impact of state and local Tobacco 21 policies in the United States: A longitudinal study of youth and young adults ages 15-21.
[100] Barrington-Trimis and others. 2020. Trends in the Age of Cigarette Smoking Initiation Among Young Adults in the US From 2002 to 2018.
[101] Macinko and Silver. 2018. Impact of New York City's 2014 Increased Minimum Legal Purchase Age on Youth Tobacco Use.
[102] Wilhelm and others. 2022. Local Tobacco 21 Policies are Associated With Lower Odds of Tobacco Use Among Adolescents.
[103] Muralidharan and others. 2019. Tobacco Advertising and ID Checks in Columbus, Ohio, in Advance of Tobacco 21.
[104] Roeseler and others. 2019. Assessment of Underage Sales Violations in Tobacco Stores and Vape Shops.
[105] Silver and others. 2016. Retailer compliance with tobacco control laws in New York City before and after raising the minimum legal purchase age to 21.
[106] Schiff and others. 2022. E-cigarette and Cigarette Purchasing Among Young Adults Before and After Implementation of California's Tobacco 21 Policy.

Policy options

Policy objective

98. The policy objective is to:

- Improve public health by continuing the downward trajectory and get smoking rates to 0%, reducing harms associated with tobacco use and getting smoking prevalence to 0%. The government wants to prevent future generations from ever taking up smoking, while not making it illegal for those who currently smoke to continue to do so.

99. There may be wider benefits such as a narrowing of health inequalities and a reduction in the levels of exposure to second hand smoke, which is particularly harmful to the health of children.

100. The intended outcomes would be a reduction in the number of people taking up smoking in the short-term and getting smoking prevalence to 0% in the long-term.

Description of options considered

Policy option list

101. The policy option list covers a range of options with brief descriptions and reasons for exclusion where applicable:

- Do nothing – This constitutes the baseline which raising the age of sale is measured against. This option involves zero costs and zero benefits in this impact assessment. The challenge, to which raising the age of sale may contribute, is to secure a further decline in the existing trend of smoking, particularly amongst young people.

- Smokefree generation – This option would make it an offence for anyone born on or after 1 January 2009 to be sold tobacco products. It would also make it an offence to purchase tobacco products on behalf of someone born on, or after 1 January 2009 (‘proxy purchasing’). This option would achieve the objective of improving public health by preventing future generations from ever taking up smoking and getting smoking prevalence to 0%.

- Raising the age of sale for tobacco products to a specific age – This option has been discounted as it does not achieve the policy objective of improving public health by preventing future generations from ever taking up smoking and getting smoking prevalence to 0%. Evidence from the UK when the age of sale was raised from 16 to 18, and from other countries, suggest this approach would reduce smoking prevalence. It does not achieve our public-supported ambition of being smokefree. There is no safe age to smoke and so it is logical to progressively raise the age of sale to protect future generations from the harms of smoking in the long-term.

- Increasing tobacco duties – Increasing the price of tobacco is an effective measure to reducing smoking prevalence[107]. However, this approach does not achieve the policy objective of improving public health by preventing future generations from ever taking up smoking and getting smoking prevalence to 0%. We want to take the best and most effective action to end smoking for good. In addition, the government already routinely increases duties year on year and has committed to a duty escalator where duties increase more than 2% above inflation until the end of the current Parliament[108].

- Prohibiting the sale of tobacco products – this option would mean that no one, of any age, would be able to be sold tobacco products. While this option would prevent future generations from taking up smoking and may be effective in achieving the government's objective of getting smoking prevalence to 0%, it has not been considered further as the government has also been clear that it will not prevent any adults that currently smoke from continuing to do so. The policy is not about criminalising those who smoke or preventing anyone who currently smokes from doing so. Smoking will never be illegal.

- Voluntary options:

  (i) Voluntary increases in the age of sale - This would allow industry to decide if they wished to stop selling tobacco products to people below a certain age.

  (ii) Education – This would mean providing further information to the public about the dangers of smoking to discourage them from taking up smoking.

102. Voluntary options have been discounted as they do not achieve the policy objective. In addition, voluntary options are also likely to contravene Article 5.3 of the World Health Organization's Framework Convention on Tobacco Control (FCTC)[109], which prevents public health policy from the vested interests of the tobacco industry, including through non-binding agreements.

103. Across all these options, other existing measures would remain in place (such as Standardised Packaging, and the Display regulations). Other activities around tobacco control will also continue and general campaigns and services will be available to smokers (such as Stoptober and Local Stop Smoking Services). In addition, on 4 October 2023 the Prime Minister announced additional investment to support people to quit smoking. The investment includes an additional £70 million per year to support local authority-led stop smoking services and £15 million per year for new national campaigns, which will include communicating the benefits of quitting and the support available. Also, in April 2023, several other tobacco control policies were announced[110]. This included a national 'swap to stop' scheme, which will offer a million smokers across

[107] Chaloupka and others. 2012. Tobacco taxes as a tobacco control strategy.
[108] HMRC. 2021. Changes to tobacco duty rates - GOV.UK (www.gov.uk)
[109] WHO FCTC. 2013. Guidelines for implementation of Article 5.3.
[110] DHSC and Neil O'Brien MP. 2023. Minister Neil O'Brien speech on achieving a smokefree 2030: cutting smoking and stopping kids vaping.

England a free vaping starter kit and funding for financial incentives for all pregnant smokers to encourage them to quit.

Option 1: Do nothing

104. Option 1: This constitutes the baseline against which raising the age of sale for tobacco is assessed. This option would mean that the legal age of sale for purchasing tobacco would remain at 18.

105. The counterfactual trend in smoking prevalence is considered the same in all options, with the policy option below measuring the marginal impact against the baseline (presented here alongside a summary of the modelling). These are discussed below in the relevant sections when assessing the options.

Model summary

106. To understand the impact of implementing the smokefree generation policy in England, modelling has been used to forecast changes in smoking prevalence over time. The model is a Markov model, commonly used in academia to analyse dynamic processes like smoking behaviour. The following paragraphs summarise the inputs and assumptions used in the modelling and a full technical description of the modelling can be found in Annex A.

107. The model uses ONS mid-year population estimates[111] for the number of people in England by sex and single year of age in 2021. The model only considers those aged 14 and over, with the number of 13 year olds entering the model each year assumed to be constant, all of which are assumed to be never smokers in every forecasted year. While there are a small number of smokers who are 13 and younger, the model treats this as a negligible number. The model considers people up to the age of 89.

108. The initial population is segmented into discrete states (smoker, former smoker, non-smoker) based on a range of data sources:

    a. NHS Digital's *Smoking, Drinking and Drug use among young people in England*[112] for those aged between 13 and 15.

    b. UCL's *Smoking Toolkit Study*[113] for those aged between 16 and 17.

    c. ONS' *Adult smoking habits in the UK*[114], for those aged 18+.

109. The initial population of former smokers is also adjusted based on 'Health Survey for England' data on the time since quitting. Former smokers that have quit for 10 years or more are assumed to be non-smokers to reflect both a negligible chance of starting smoking again and the decrease in risks associated with having quit for so long.

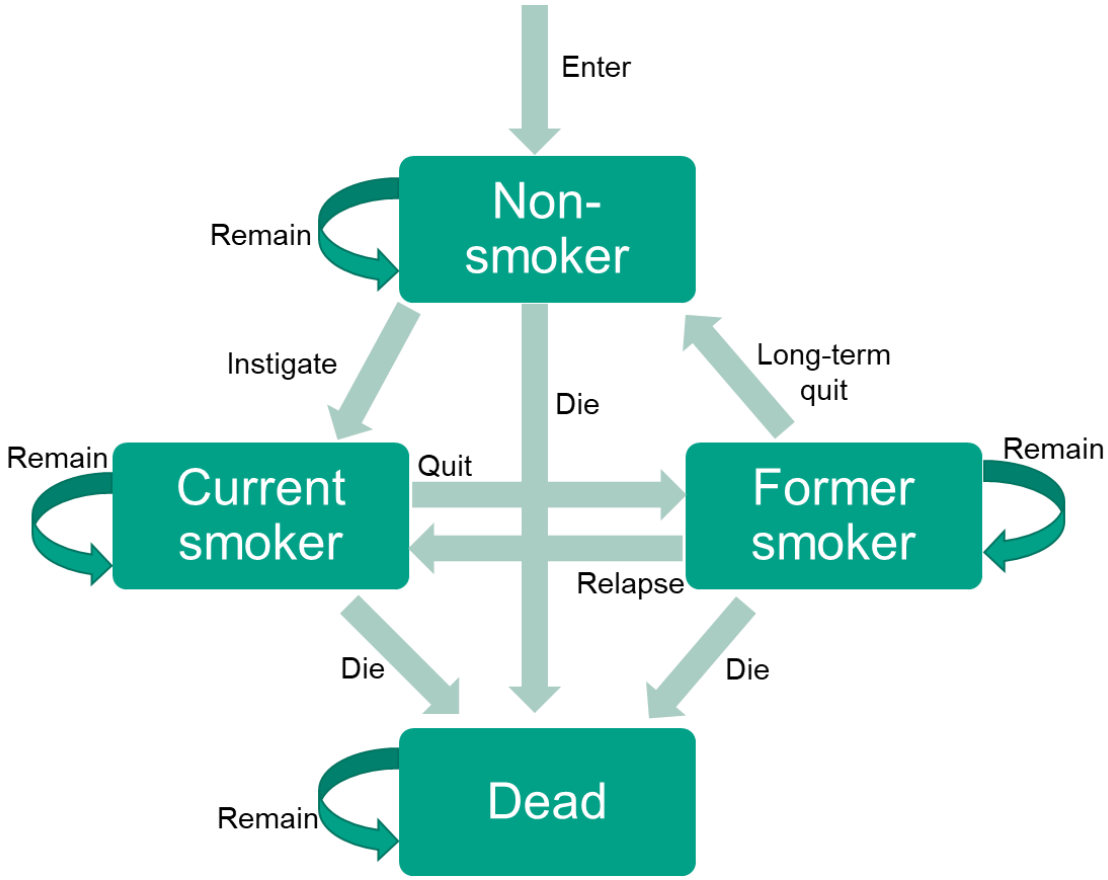
[111] ONS. 2022. Estimates of the population for the UK, England, Wales, Scotland and Northern Ireland.
[112] NHS Digital. 2022. Smoking, Drinking and Drug Use among Young People in England, 2021.
[113] University College London. Top-line findings on smoking in England from the Smoking Toolkit Study..
[114] ONS. 2023. Adult smoking habits in the UK: 2022.

110. Transition probabilities from the University of Sheffield's Alcohol and Tobacco model[115], which are based on survey data, are used to model how individuals move between the smoking states over time, which allows for the analysis of complex interventions. Figure 1 shows the way individuals can move through the model. Individuals moving from the non-smoker state to the current smoker state are said to have 'instigated,' current smokers moving to former smokers are said to have 'quit', and former smokers moving to current smokers are said to have 'relapsed'. Former smokers can also move to the non-smoker state to reflect a decreased chance of quitting and disease incidence.

111. The published transition probabilities are split by IMD quintile, however, for this modelling, these have been adjusted to fit the model structure using data from the Local Tobacco Control Profiles[116], as detailed in Annex A.

112. The populations in each state can move into the 'dead' state. The transition probabilities for this are based on mortality rates from ONS' National Life Tables[117]. Mortality rates among current and former smokers among those aged 35 and older are greater[118], and the model accounts for this when calculating the transition probabilities. The model estimates the number of deaths based on the population in each state and the risk based on smoking status, as well as by age and sex.

Figure 1: Tobacco Markov model structure



[115] University of Sheffield. The Sheffield Tobacco and Alcohol Policy Modelling Platform: Smoking state transition probabilities.
[116] OHID. Local Tobacco Control Profiles.. 10% of the populations in each decile, aggregated up to quintiles.
[117] ONS. 2024. National life tables: UK.
[118] Doll and others. Mortality in relation to smoking: 50 years' observations on male British doctors.

113. Data on disease incidence from the Global Burden of Disease[119] for four conditions (Lung cancer, Stroke, Coronary Heart Disease (CHD) and Chronic Obstructive Pulmonary Disease (COPD)) - which account for almost 60% of ill health and early deaths attributable to smoking - are combined with relative risks of developing these diseases for current, former and non-smokers by sex from the Royal College of Physician's (RCP's) Hiding in Plain sight report.[120] The model then estimates the number of disease cases for each disease based on the population in each state and the absolute risk based on smoking status. Smokers and former smokers under 35 are assumed to have no increased risk of disease (see Annex A).

114. The model uses a baseline to compare interventions against, which remains the same across all modelled scenarios. In the baseline, the modelled prevalence is expected to continue to fall irrespective of any new policy implemented. The results of each scenario are presented as relative to the baseline.

115. The aim of the policy is to further reduce the number of young people taking up smoking (instigation). Based on survey data, the majority of smokers start smoking before the age of 20[121], and starting smoking after the age of 30 is rare. Therefore, in this model, instigation rates are only included for those aged 14 to 30. Each scenario, including the central estimate of the smokefree generation policy (selected based on expert elicitation described below) and additionally modelled scenarios that make up the sensitivity analysis, is based on a change in instigation rates for the populations under the new legal age of sale. The changes to instigation rates are described below under the results section, while all other model input parameters are held constant across all scenarios.

116. The modelling assumed only changes to instigation rates as a result of implementing the smokefree generation policy. The smokefree generation policy might plausibly lead to an increase in quit rates, a reduction in amount smoked and a reduction in relapse among existing smokers as a result of wider societal change, but the model assumes no change to these variables. The model also does not account for other external factors such as vaping, additional funding for stop smoking services and stop smoking campaigns, and any future increases in duty rates.

117. The results from the model range across the time period of 2023 up to 2100 in order to assess the longer-term impacts on disease incidence, mortality, and costs. The outputs over this period presented below for the baseline and central scenarios separately are:

    a. The total number of smokers aged 14 and over

    b. The prevalence of smoking among those aged 14 to 30

    c. The prevalence of smoking among those aged 18+

[119] Institute for Health Metrics and Evaluation. 2020. Global Burden of Disease (GBD).
[120] RCP. 2018. Hiding in plain sight: Treating tobacco dependency in the NHS.
[121] PHE. 2015. Health matters: smoking and quitting in England.

d. The number of deaths (for intervention scenarios, measured as a change against the baseline)

e. The number of cases of lung cancer, stroke, CHD and COPD (for scenarios, measured as a change against the baseline)

f. Social value gained (based on a reduction in the costs associated with smoking)

118. While a Markov model is a widely used approach for considering smoking behaviour, there are some limitations. The modelling results consider early mortality and four major health conditions associated with smoking; however, it is well evidenced that there are a number of other smoking related impacts that are not accounted for. For example, smoking during pregnancy (and the associated poor birth outcomes) is not taken into account. Passive smoking (exposure to cigarette smoke) can also cause all the harms of smoking although at lower levels, and these are not taken into account in the model.

119. Further limitations are discussed in the technical annex, Annex A.

Baseline results

120. Based on population estimates from ONS' 2021 mid-year population estimates, the initial population of those aged 13 and over included in the model is 47,560,873. The population of those aged 14 to 30 is 11,777,381 and for 18 years and over the population is 44,265,327.

121. Table 7 shows the smoking prevalence rates that are applied to the single year of age 2021 population estimates from the ONS. Where prevalence rates apply to an age band rather than a single year of age, prevalence is assumed to be the same for everyone in that band. The same sources are used to provide the proportion that are former and non-smokers.

Table 7: Smoking prevalence by age and sex used for initial populations in the model

Age	Smoking prevalence (%)		Source
	Male	Female	
13	1.4	0.8	NHS Digital. Smoking, Drinking and Drug use among Young People in England, 2021
14	2.3	3.4	
15	7.1	10.6	
16 to 17	14.1	14.1	UCL. Smoking Toolkit Study.
18 to 24	13	10.2	ONS. Adult smoking habits in the UK, 2022.
25 to 34	19.1	13.4	
35 to 44	17.3	11.6	
45 to 54	16	11.8	
55 to 64	14.1	12.4	
65+	8.7	7.6	

122. Based on Table 7 and ONS' 2021 mid-year population estimates, the initial population of those aged 13 and over (47,560,837) is split by smoking status. Before adjustments to the former smokers to reflect 10-year quitters: 5,894,297 are current smokers (12.4%), 11,096,889 are former smokers, and 30,569,687 are non-smokers.

123. For the 11,777,381 aged 14 to 30, before adjustments to the former smokers to reflect 10-year quitters, 1,528,491 are current smokers (13%), 1,054,421 are former smokers, and 9,194,470 are non-smokers.

124. For the 44,265,327 aged 18 and over, before adjustments to the former smokers to reflect 10-year quitters, 5,628,763 are current smokers (12.7%), 11,008,179 are former smokers, and 27,628,384 are non-smokers.

125. In the baseline, the transition probabilities are assumed to be held constant between all states, as opposed to using the University of Sheffield's projected rates over time, in which the trends in the transition probabilities continue until 2040.

126. If we were to use the University of Sheffield's projected rates over time for the transition probabilities it would lead to future smoking prevalence rates being lower in our baseline. However, the projected trends in transition probabilities from the University of Sheffield assume that there is some continued policy intervention on smoking.

127. Holding the transition probabilities constant at 2023 rates still results in smoking prevalence in our baseline declining. The trends in our baseline reach a long-run steady state of smoking prevalence that is lower than current levels of smoking (once the starting population has aged out of the model). Although it is still higher than if we used the University of Sheffield's projected transition probabilities.

128. The transition probabilities are assumed to be held constant in the baseline because, while smoking overall has been declining in recent years, it is plausible that without action smoking rates could stall or even rise, as seen in Australia[122] and in New York in the USA[123]. Given this uncertainty about whether these trends in transition probabilities would continue inherently or only as a result of continued policy action on smoking, we have assumed the transition probabilities were assumed to remain constant.

129. Also, holding the transition probabilities constant at 2023 rates still results in smoking prevalence in our baseline declining. This provides baseline trends over the coming years that are broadly in line with other estimates from Cancer Research UK's Smoking prevalence projections for England based on data to 2021[124] and University of Sheffield's projections from 2021, published in the Royal College of Physicians report, 'Smoking and health 2021: a coming of age for tobacco control?'.[125]

[122] The Guardian. 2023. Australia's teenage smoking rates rise for first time in 25 years, research reveals.
[123] The Wall Street Journal. 2014. New York City's Adult Smoking Rate Climbs.
[124] Cancer Research UK. 2022. Smoking prevalence projections for England based on data to 2021.
[125] Royal College of Physicians. 2021. Smoking and health 2021: A coming of age for tobacco control?

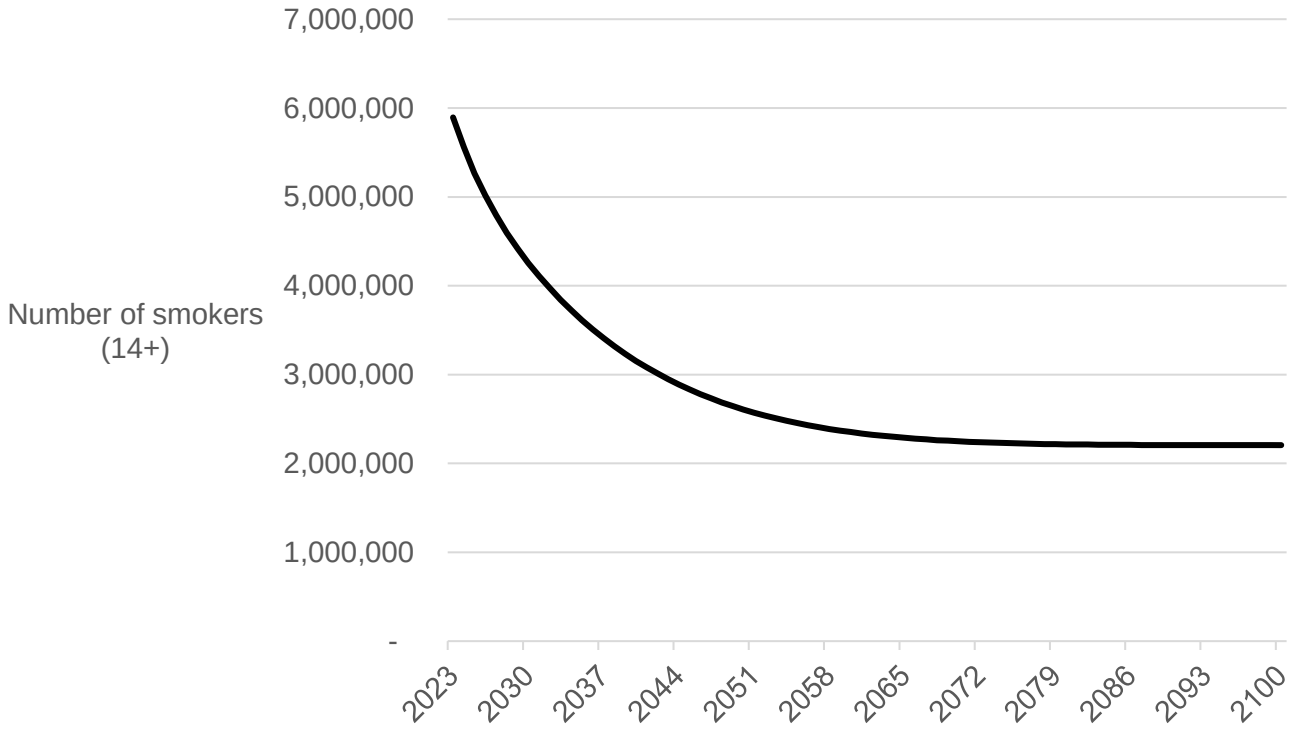
130. We have used the University of Sheffield projected transition probabilities in a scenario in the sensitivity analysis.

131. In the 10 years from 2011 to 2022, smoking rates in the UK declined in all ages[126], with the largest reduction among 18 to 24 year olds: 25.7% of this group smoked in 2011 compared with 11.6% in 2022. In comparison, in terms of percentage points, smoking prevalence declined the least among those 65 years and older, from 10.2% in 2011 to 8.3% in 2022. The baseline results using the inputs described above suggest prevalence will continue to fall irrespective of any new policy as follows:

Total number of smokers aged 14 and over

132. The total number of smokers is used to estimate some costs and benefits associated with the policy. In the baseline, the total number of smokers aged 14 and over is estimated to fall from 5,894,297 in 2023, to 2,431,178 in 2056, continuing to decline slowly to 2,206,131 smokers in 2100. Smoking prevalence for those aged 14 and over is estimated to fall from 12.4% in 2023 to 5.1% in 2056 and continuing to decline to a prevalence rate of 4.9% in 2100.

Figure 2: Modelled baseline number of smokers aged 14 and over in England, 2023 to 2100

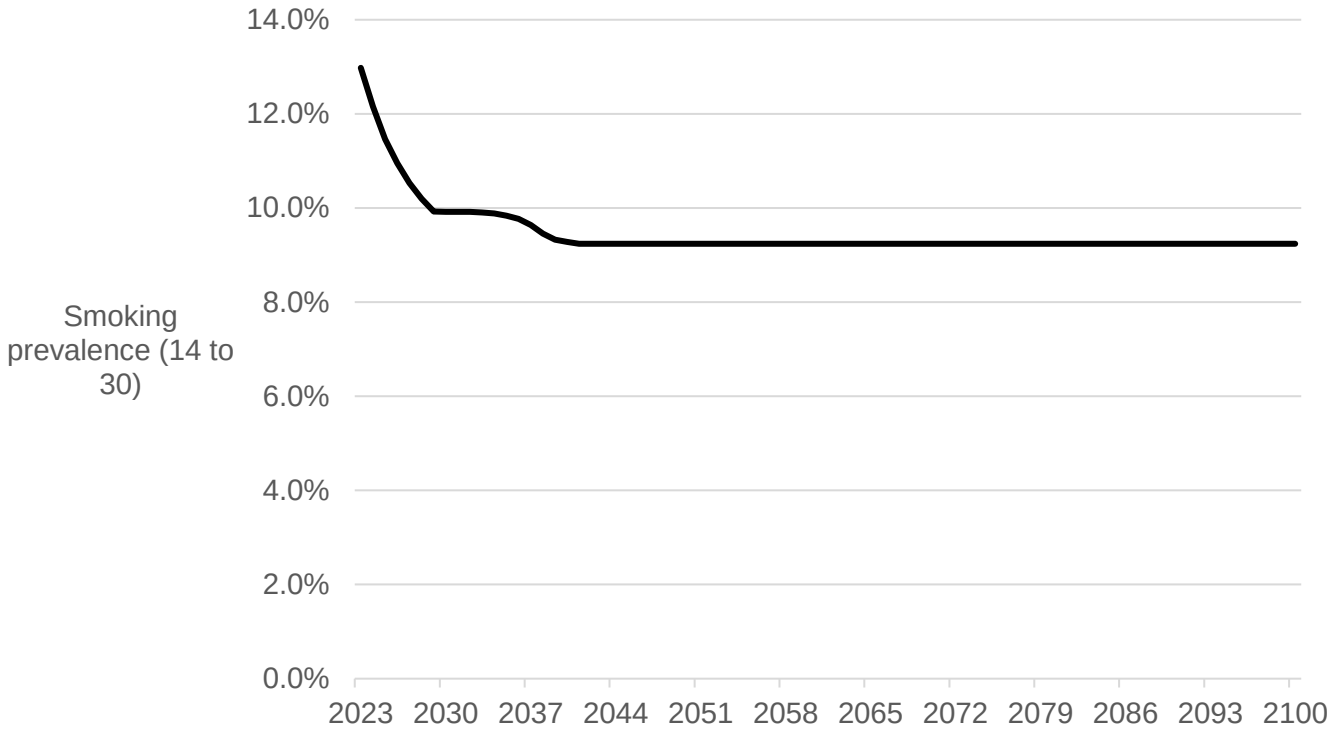


Smoking prevalence, 14 to 30 years old

133. Those aged 14 to 30 are the key targeted populations of the policy, as this is where the majority of smoking instigation occurs. In the baseline, smoking prevalence among those aged 14 to 30 is estimated to fall from 13.0% in 2023 to a steady state of 9.2% in 2041, and continues at this level throughout the rest of the modelled period.

[126] ONS. 2023. Adult smoking habits in the UK: 2022.

Figure 3: Modelled baseline prevalence for those aged 14 to 30 years old, 2023 to 2100



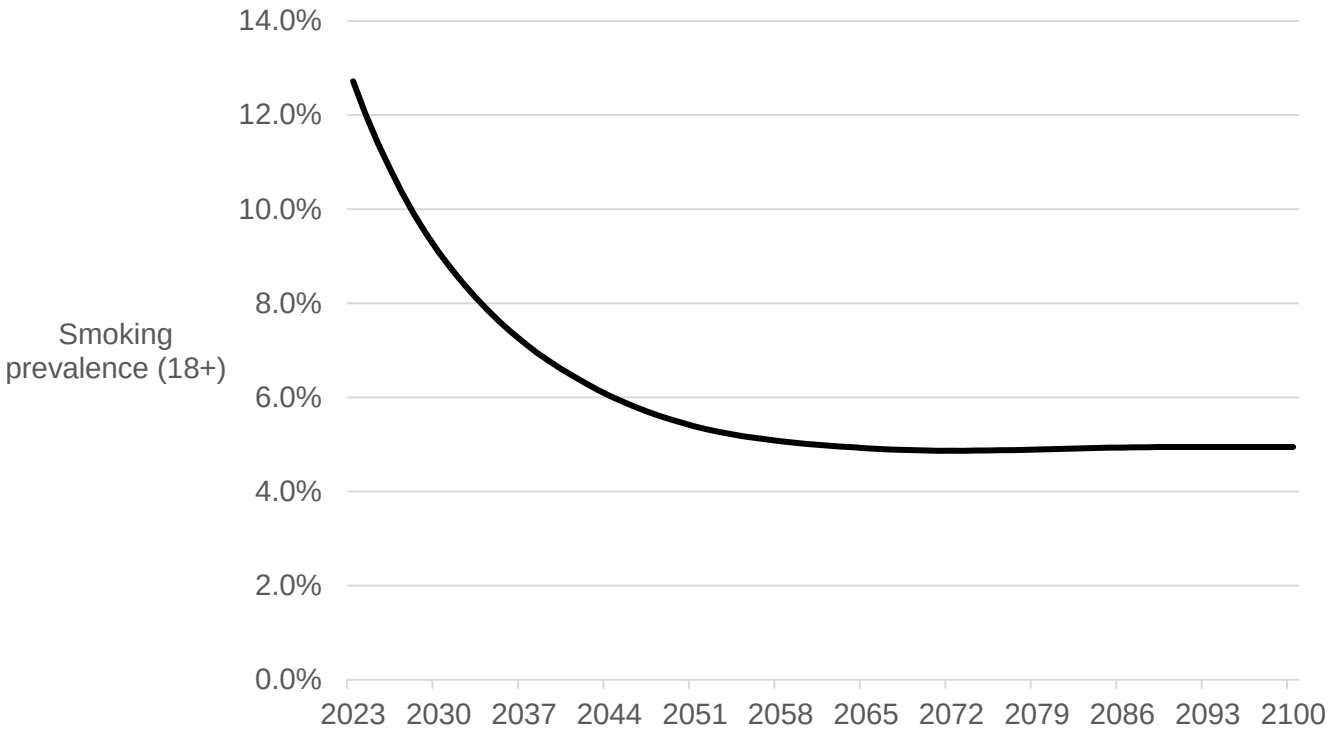
Smoking prevalence, 18 years and over

134. The government's national ambition for smoking prevalence is based on prevalence among those aged 18 and over. In the baseline, smoking prevalence among those aged 18 and over is estimated to fall from 12.7% in 2023 to 5.1% in 2056, and further to around 4.9% in 2064, and continues at this level throughout the rest of the modelled period.

135. The baseline smoking prevalence for those aged 18 and over is similar to other published smoking prevalence projections, including Cancer Research UK[127] and University of Sheffield's projections from 2021[128].

[127] Cancer Research UK. 2022. Smoking prevalence projections for England based on data to 2021.
[128] Roya College of Physicians.2021. Smoking and health 2021: A coming of age for tobacco control?

Figure 4: Modelled baseline smoking prevalence in those aged 18 and over in England, 2023 to 2100



Option 2: Introduce legislation to create a smokefree generation (SFG)

136. Option 2: Introducing legislation to make it an offence for anyone born on or after 1 January 2009 to be sold tobacco products. This option would mean over time an increasing proportion of the population will be unable to be sold tobacco products, effectively increasing the legal age of sale until no one can be sold cigarettes.

Summary and preferred option with description of implementation plan

137. The preferred option is Option 2.

138. The smokefree generation policy will be legislated for in The Tobacco and Vapes Bill as soon as Parliamentary time allows. The Bill will make it an offence for anyone born on or after 1 January 2009 to be sold tobacco products, replacing the current age of sale (18) for tobacco products. This will prevent children turning 14 in 2023 or younger from ever being legally sold tobacco products, thereby protecting future generations from tobacco addiction, resulting in significant public health benefits. This received support from 63.2% of consultation respondents to this question, while 32.2% disagreed and 4.6% said that they did not know.

139. The Bill will also make it an offence for anyone to purchase tobacco products on behalf of anyone born on or after 1 January 2009, amending existing legislation prohibiting proxy purchases. This is in line with the views of the consultation respondents, with 73.7% of those who answered the question in favour of this proposal, 20% not in favour and 6.3% stating that they did not know. The Bill will also amend the text of warning notices that retail premises selling tobacco products are required to display to align with the new age of sale and require retail premises to amend existing warning signs to read ‘it is an offence to sell tobacco products to anyone born on or after 1 January 2009’. In the consultation, 71.8% of respondents to this question were in support of this amendment, 22.6% disagreed and 5.6% did not know.

140. As described above, for this policy, the Bill will cover the whole of the UK.

141. These changes, including the consequential amendments to proxy purchasing and warning notice legislation, would come into effect from 1 January 2027, when people born on 1 January 2009 turn 18 years old.

142. As is the case with existing age of sale legislation, new legislation would be enforced by local authorities. In practice, the majority of enforcement activity is undertaken by local authority Trading Standards teams.

Option 2: Costs and Benefits

143. This option will make it an offence for anyone born on or after 1 January 2009 to be sold tobacco products.

144. If the policy is successful, the main benefits may accrue through:

- Health benefits upon fewer young people taking up smoking
- Reduced costs to the NHS and social care
- Higher productivity/earnings for those that otherwise might have started smoking and developed health conditions
- Reduced adult and child ill-health caused by second hand smoke (SHS), including avoidable treatment costs
- Reduction in health inequalities
- Higher spending and total profits in other sectors of the economy as would-be smokers divert spending

145. The main categories of costs considered are:

- The cost to retailers to check people's age and ensure they meet the new legal requirements to purchase tobacco
- The costs to manufacturers, wholesalers, and retailers, including a reduction in profits associated with fewer number of smokers
- The cost to retailers of staff training and awareness
- Costs to government of publicising the legislation and issuing guidance
- Enforcement costs
- Net costs to the Exchequer through the loss of tax from reduced tobacco consumption (but higher consumption of other goods)

146. A summary of the costs and benefits is below, followed by details regarding each cost and benefit identified and estimated. Most elements of the cost-benefit analysis rely on the overall effect size of the policy, which we outline independently to begin with.

147. The appraisal period for this IA is 30 years, from 2027 (expected policy implementation) to 2056. A longer appraisal period has been selected due to the long-term nature of the policy, where both costs and benefits would be expected to accrue beyond the standard 10 year period. Despite using a longer appraisal period, not all costs and benefits of this policy are expected to be captured in this time period. Specifically, and as outlined below, the benefits of the policy will continue beyond 2056 and increase in size due to the nature of the policy option. For this reason, illustrative benefits up to 2100 are often presented. While costs may also continue beyond the 30 year appraisal period, there is more uncertainty around these and how they will be realised, particularly where markets may be expected to change.

148. The modelling summarised above only estimates the impact of implementing the smokefree generation policy in England. However, as described above, the Bill will cover the whole of the UK. Therefore, for each quantified cost and benefit, we have presented the estimate for England and as well as for the UK. As we do not have data to model the specific impacts for the UK, the estimates costs and benefits presented for the UK are the England estimates adjusted based on the relative size of the population in England compared to the whole of the UK. Based on population estimates from ONS[129], England accounts for around 84% of the population of the UK. Therefore, all the England estimates have been uplifted by 1.19[130] to provide estimates for the costs and benefits of the smokefree generation policy to the UK.

149. The Net Present Value (NPV) and Equivalent Annual Net Direct Cost to Business (EANDCB) provided on the summary sheets for this impact assessment are the estimates for the UK.

[129] ONS. 2022. Population estimates for the UK, England, Wales, Scotland and Northern Ireland.
[130] Calculated by dividing the population of the UK by the population of England.

Option 2 - Summary of costs and benefits by stakeholder group (2027 prices)

Stakeholder	Impact	Cost/Benefit	Quantified?	England Estimate (£million)	UK Estimate (£million)	In NPV?	In EANDCB?
General population of smokers, quitters, and non-smokers	Avoided mortality - monetised QALYs	Benefit	Yes	404.6	479.7	Yes	No
	Reduction in disease cases	Benefit	No	-	-	N/A	N/A
	Reduction in second hand smoke exposure	Benefit	No	-	-	N/A	N/A
	Reduction in tobacco litter	Benefit	No	-	-	N/A	N/A
Wider societal benefits	Productivity gains	Benefit	Yes	20,740.1	24,588.3	Yes	No
	Reduction in healthcare costs	Benefit	Yes	2,752.1	3,262.7	Yes	No
	Reduction in social care costs	Benefit	Yes	1,649.0	1,954.9	Yes	No
	Reduction in smoking related fire costs	Benefit	Yes	867.9	1,028.9	Yes	No
Retailers	Age verification	Cost	Yes	98.4	116.8	Yes	Yes
	Familiarisation - Staff training and awareness	Cost	Yes	7.6	9.0	Yes	Yes
	New signage	Cost	Yes	0.2	0.2	Yes	Yes
	Lost profits due to fewer smokers	Cost	Yes	1,932.3	2,290.8	Yes	Yes
	Increase in profits due to offset expenditure	Benefit	No	-	-	N/A	N/A

Stakeholder	Impact	Cost/Benefit	Quantified?	England Estimate (£million)	UK Estimate (£million)	In NPV?	In EANDCB?
Shisha bars	Age verification	Cost	No	-	-	N/A	N/A
	Familiarisation - Staff training and awareness	Cost	Yes	0.05	0.05	Yes	Yes
	New signage	Cost	No	-	-	Yes	Yes
	Lost profits due to reduced sales	Cost	No	-	-	No	No
Wholesalers	Lost profits due to fewer smokers	Cost	Yes	427.2	506.4	Yes	Yes
	Increase in profits due to offset expenditure	Benefit	No	-	-	N/A	N/A
Manufacturers	Lost profits due to fewer smokers	Cost	Yes	587.4	696.4	No	No
	Increase in profits due to offset expenditure	Benefit	No	-	-	N/A	N/A
HMRC and taxpayers	Reduction in tobacco duty receipts	Cost	Yes	21,983	26,061	No	No
Department of Health and Social care	Communication costs	Cost	Yes	1.5	1.8	Yes	No
Local authorities	Enforcement costs	Cost	No	-	-	N/A	N/A
	Additional quitters engaging with stop smoking services	Cost	No	-	-	N/A	N/A

Stakeholder	Impact	Cost/Benefit	Quantified?	England Estimate (£million)	UK Estimate (£million)	In NPV?	In EANDCB?
Retail workers	Increased aggression and abuse	Cost	No	-	-	N/A	N/A

Effect size

150. The estimated effect size is the number of fewer smokers in the population as a result of this policy option, the subsequent number of deaths and disease cases avoided, and wider societal benefits such as reduction in productivity costs associated with smoking and reductions in health and social care costs for smoking. A range of scenarios have been modelled, and a central scenario has been selected based on consultation with experts in tobacco control.

151. The central scenario and associated results are described below, and additional scenarios exploring different impacts on instigation rates are included later in the sensitivity analysis section.

Central scenario

152. In the command paper published on 4 October 2023[131], Annex 1 contained the preliminary modelling on the impact of the smokefree generation policy.[132] Also, on 1st December 2023, we published a more detailed explanation of the preliminary modelling[133]. In the Annex and more detailed explanation of the modelling, we provided the results based on four scenarios on the impact the policy would have on smoking instigation rates. The four scenarios we considered are in Table 8.

Table 8: Modelled scenarios for the command paper

Scenario	Explanation
Scenario 1	Reflects a report published by the Institute of Medicine (IoM)[134] in the US in 2015 that projected raising the age of sale by one year to 19 would reduce rates by 10% for most age groups below the threshold, and 5% for some. In addition, it is assumed that there is a small increase in the instigation rates, of 5%, for the last two ages that can legally smoke. In the IoM report this was referred to as a 'rebound' effect.
Scenario 2	Assumes a 30% reduction in instigation rates per year for those below the age of sale. Reflects an assumption from UCL[135] that raising the age of sale to 21 would reduce prevalence among 18 to 20 year olds by 30% and reduce instigation rates by the same amount.
Scenario 3	Assumes a 60% reduction in instigation rates per year for those below the age of sale. Reflects mid-point of Scenario 2 and 4.
Scenario 4	Assumes a 90% reduction in instigation rates per year for those below the age of sale. Reflects the assumptions used by the New Zealand Government for its implementation of a smokefree generation, which assumed a 100% reduction in instigation rates. A 90% year on year reduction has been modelled here rather than assuming immediate universal cessation of smoking instigation.

[131] DHSC. 2023. Stopping the start: our new plan to create a smokefree generation - GOV.UK (www.gov.uk)
[132] DHSC. 2023. Annex 1: modelling assumptions - GOV.UK (www.gov.uk)
[133] DHSC. 2023. Modelling for the smokefree generation policy - GOV.UK (www.gov.uk)
[134] Bonnie and others. 2015. The Effect on Tobacco Use of Raising the Minimum Age of Legal Access to Tobacco Products - Public Health Implications of Raising the Minimum Age of Legal Access to Tobacco Products.
[135] University College London. 2021. UCL modelling of recommendations for tobacco control in England.

153. For the purposes of this impact assessment, we have selected **Scenario 2** as our central scenario.

154. To decide on which scenario to use as our central scenario we consulted 19 expert stakeholders by email from the UK, Australia, and New Zealand, mostly academics, that work in tobacco control and/or have experience of similar modelling. We asked the expert stakeholders:

Which of the four scenarios [same as in Table 8] do you consider to best reflect the likely impact on smoking instigation rates of raising the age of sale of tobacco by one year every year?

155. We received 14 responses all of which answered this question and Scenarios 2 and 3 were jointly identified as the most likely impact this policy would have on instigation rates, with five stakeholders selecting each scenario. No stakeholders selected Scenario 1 and two selected Scenario 4. It should be noted that two stakeholders did suggest somewhere between scenarios 1 and 2. While we took these into account, we did not include them in the total number opting for scenario 1 or 2.

156. We decided to select Scenario 2 as our central scenario as a relatively more conservative assumption on the likely effect size of this policy. A more conservative assumption (meaning selecting Scenario 2 over Scenario 3) on the likely impact of the effect of this policy was considered appropriate for two main reasons.

157. Firstly, we recognise that there is uncertainty on the impact the policy will have on instigation rates given this specific policy approach has not been implemented anywhere else in the world. This means there is no real-world evidence on the impact this policy has had in any other countries. The central scenario is based on an assumption used by UCL for modelling the impact of raising the age of sale for tobacco in the UK from 18 to 21. UCL based their assumption on evidence from the UK on the impact of raising the age of sale from 16 to 18 and from the US on the impact of raising the age of sale from 18 to 21.

158. Secondly, we recognise that there are risks around the practical implementation of this policy. This includes some people under the new age of sale continuing to be able to be sold tobacco. Data from the Smoking, Drinking and Drugs use among Young People Survey 2021 (SDD)[136] shows that some people under the current legal age of sale for tobacco (18) are still able to be sold tobacco in shops. The available data shows that in 2021, 3% of 11 to 15 year olds were current smokers. Among this group, 32% said that they purchased cigarettes from a shop. This will continue under the new regulations if some retailers do not comply with the new regulations, as was reported by studies in the US on the impact of raising the legal age of sale to 21. However, it should be noted that this Bill will also introduce Fixed Penalty Notices (FPNs) for underage tobacco, vape (nicotine and non-nicotine) and other consumer nicotine product sales. This will help local authority Trading Standards enforce the legal age of sale for tobacco products.

[136] NHS Digital. 2022. Smoking, Drinking and Drug Use among Young People in England, 2021.

159. Some retailers may also have difficulties in differentiating between customers above and below the new legal age of sale for tobacco. Although this should be mitigated by regular identification checks by retailers. Shops are encouraged to regularly check the age of customers that may be under the legal age of sale for age restricted products[137] through initiatives such as Challenge 25. In 2022, the Association of Convenience Stores (ACS) launched a campaign to raise awareness of Challenge 25 and support staff in convenience stores[138].

160. We also recognise that some people under the new age of sale may still be able to access tobacco products through people they know. This could result in a displacement effect, whereby tobacco sales increase for those who can still legally purchase tobacco if they want to purchase them for someone they know under the legal age of sale, such as a friend or partner. For example, the SDD 2021 data shows that among current smokers aged 11 to 15 years old, 58% were given cigarettes by people and 33% bought them from people, such as friends, siblings, or parents. However, the size of any displacement effect of this policy is likely to be reduced by the Bill also making it an offence to purchase tobacco products on behalf of someone under the legal age of sale ('proxy purchasing').

161. Therefore, we have selected our central scenario based on the information provided to us by the expert stakeholders we consulted and to ensure that our central scenario accounts for some people under the legal age of sale for tobacco continuing to smoke after the policy has been implemented. This is instead of assuming that the proportion of people taking up smoking for those under the new legal age of sale will immediately reduce by 100%, despite it becoming illegal to sell tobacco products to these people.

162. We also asked the expert stakeholders:

In the model should we assume that raising the age of sale of tobacco by one year every year would reduce instigation rates year on year, or just have a one-off impact?

163. Out of the 12 expert stakeholders that answered this question, 11 selected a year-on-year reduction in instigation rates as the most appropriate assumption to use in our modelling.

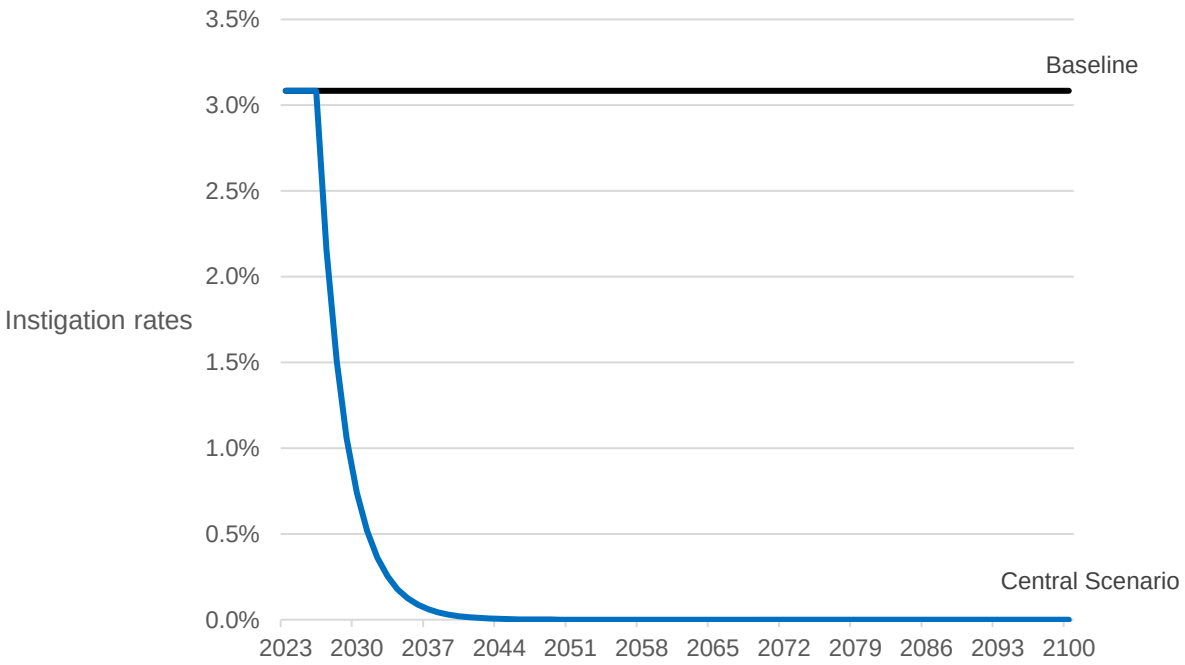
164. Therefore, in our central scenario we assume that for those under the new age of sale, the rate of instigation falls by 30% each year. For example, in 2027 the instigation rates for 18 year olds will decrease by 30%, in 2028 it will decrease by a further 30%, and in 2029 a further 30%, and so on. This reflects that the policy will mean that each year, 18 year olds will become one year further away from the legal age of sale for tobacco products, making it increasingly less likely that they will take up smoking. This is compared to using an assumption that the policy will only have a one-off impact on instigation rates for each age group under the new age of sale. In that case, the

[137] In Scotland, there is a related is an offence under Section 4B of the 2010 act; if a person carries on a tobacco or nicotine vapour business and fails to operate an age verification policy.
[138] Association of Convenience Stores. 2022. ACS Launches Expanded Challenge25 Campaign to Support Colleagues in Local Shops.

instigation rates for 18 year olds would decrease by 30% in 2027 and then remain constant at that level.

165. Figure 5 shows the instigation rate for males aged 18 each year from 2023 to 2100 for both the baseline scenario (assumed to remain constant) and the central scenario. The expected implementation date is 2027, therefore there is no change in instigation rates between 2023 and 2027 in either the baseline or central scenario.

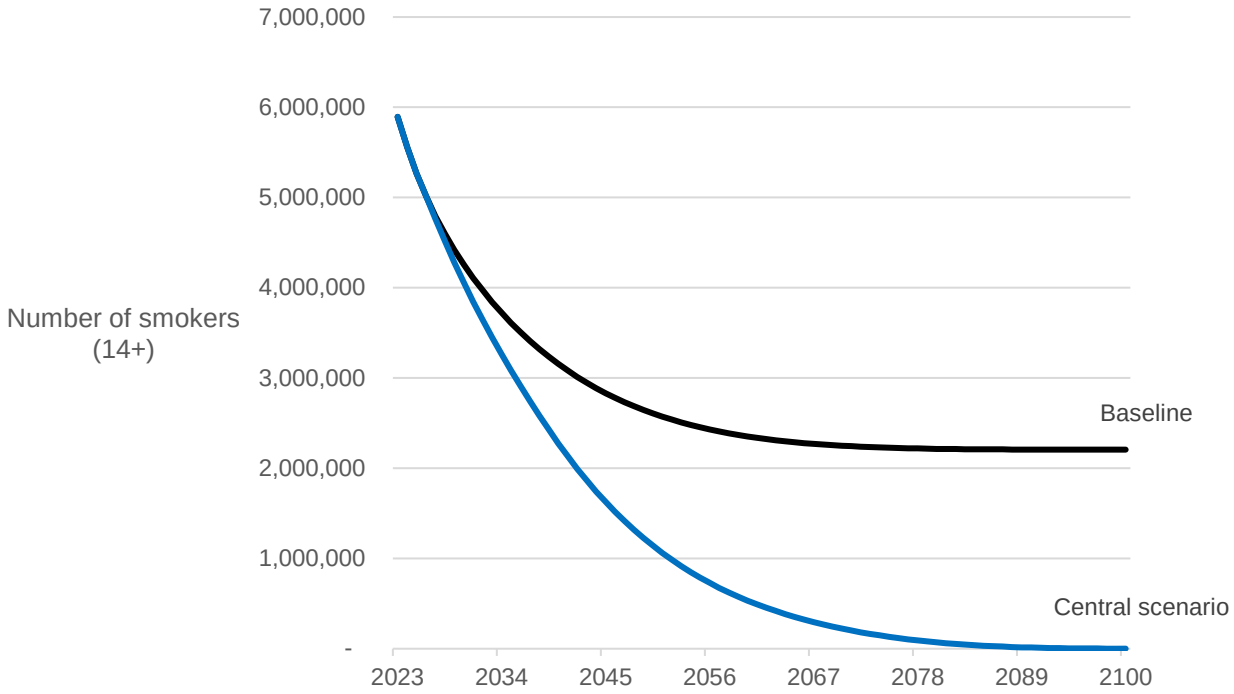
Figure 5: Modelled instigation rates, 18-year-old males, 2023 to 2100



Total number of smokers aged 14 and over

166. In the central scenario, the total number of smokers aged 14 and over is estimated to fall from 5,894,297 in 2023, to 730,399 in 2056, and continues to fall to less than 1,000 by 2100. Smoking prevalence for those aged 14 and over is estimated to fall from 12.4% in 2023, to 1.5% in 2056, continuing to fall to effectively zero by 2100. Compared with the baseline, this is 1,700,779 fewer smokers in 2056 or 3.6 percentage points lower.

Figure 6: Modelled total number of smokers aged 14 and over in England, 2023 to 2100



167. As explained above, our central scenario accounts for some people under the new legal age for purchasing tobacco still smoking, as opposed to all instigation under the age of sale going to zero immediately after implementation.

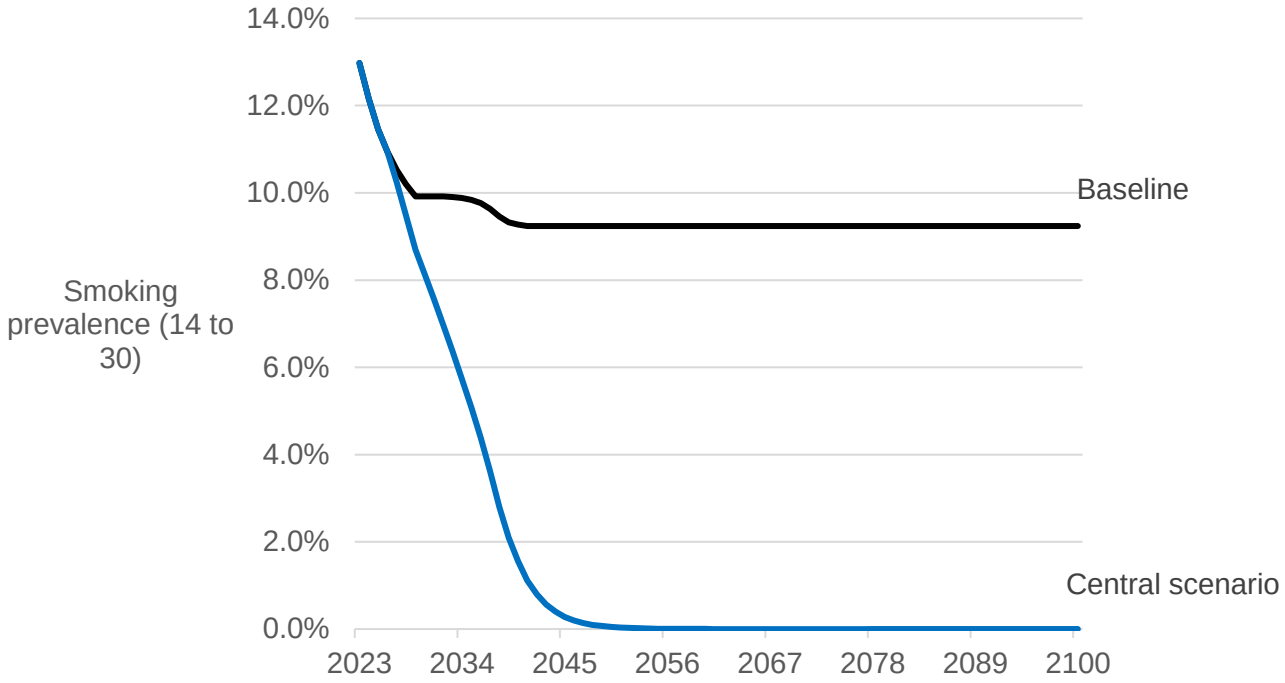
168. Also, although in the long run smoking prevalence gets close to zero percent, the effect of reducing instigation rates by 30% each year means it never completely reaches zero and a small number of people will continue to smoke. This means that the model assumes some people continue to smoke despite it being illegal for effectively all ages to be sold tobacco by 2100. This seems a more realistic situation than prevalence dropping to zero, for example, some people still access and use illicit drugs[139].

Smoking prevalence, 14 to 30 years old

169. In the central scenario, smoking prevalence among those aged 14 to 30 is estimated to fall from 13.0% in 2023, to effectively zero by 2050, and continues at this level to 2056 and throughout the rest of the modelled period. Compared with the baseline, this is 9.2 percentage points lower in 2056.

[139] ONS. 2023. Drug misuse in England and Wales - Office for National Statistics.

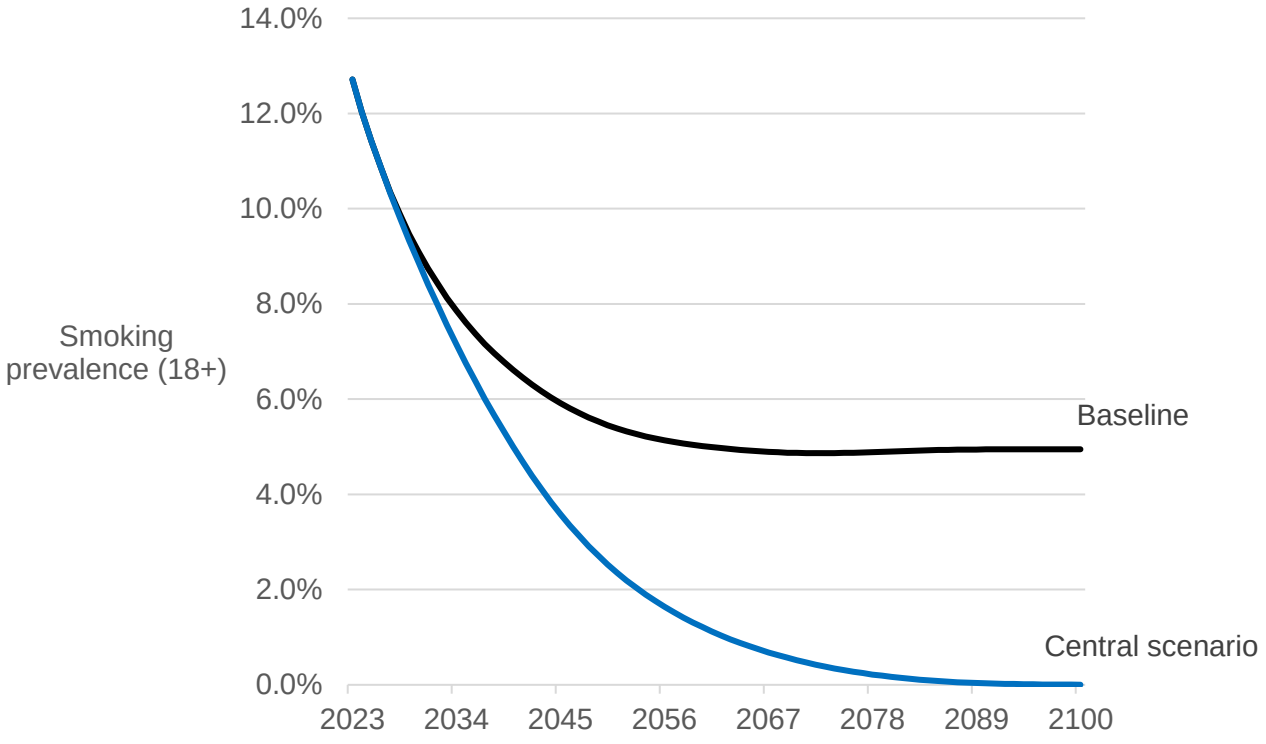
Figure 7: Modelled smoking prevalence (14 to 30 years old), baseline vs central scenario



Smoking prevalence, 18 years and over

170. In the central scenario, smoking prevalence among those aged 18 and over is estimated to fall from 12.7% in 2023 to 1.6% in 2056 and continues to fall to effectively zero by 2100. Compared with the baseline, this is 3.5 percentage points lower in 2056.

Figure 8: Modelled smoking prevalence (18+), baseline vs central scenario.



Deaths avoided

171. Based on the central scenario and the resulting fewer smokers, a number of deaths would be avoided due to the lower risk of mortality for those who do not take up smoking. The model outputs the number of deaths avoided per year compared with the

baseline, and these are added together to provide the cumulative number of deaths avoided by particular years of interest in this impact assessment.

172. Due to the long-term nature of smoking and smoking related mortality, the modelling doesn't estimate any avoided deaths as a result of the policy until 2044. However, between 2044 and 2056 (30 years post-implementation) the cumulative number of deaths avoided rises sharply to 2,579 in the model.

173. The trend in deaths avoided continues to increase, as subsequent cohorts experience the benefits of a smokefree generation, up to a cumulative 154,593 deaths avoided in 2100.

Disease cases avoided

174. Based on the central scenario and the resulting fewer smokers, a number of disease cases would be avoided due to the lower risk of disease for those who do not take up smoking. The model outputs the number of disease cases avoided per year compared with the baseline. The model looks at disease cases for 4 main diseases: Lung cancer, Stroke, CHD and COPD, which account for almost 60% of ill health and early deaths attributable to smoking. Table 9 shows the number of disease cases avoided in England for each of the four main diseases for the central scenario.

175. Due to the long-term nature of smoking and smoking related morbidity, the modelling estimates 10,886 disease cases avoided by 2056. As with smoking related mortality, this number rapidly increases up to year 2100, with over 470,000 estimated disease cases avoided by 2100.

Table 9: Modelled disease cases avoided, central scenario vs baseline

Disease	Cumulative cases avoided (central scenario vs baseline)	
	2056	2100
Lung cancer	380	42,621
Stroke	498	10,101
CHD	3,770	138,318
COPD	6,238	279,104
Total	**10,886**	**470,143**

General population of smokers, quitters, and non-smokers

Monetised QALY benefits

176. There are established benefits from not taking up smoking.[140]

177. In the baseline, the total life years lost as a result of all deaths that occur are monetised based on the average population utility, estimated to be 0.828[141], and the value

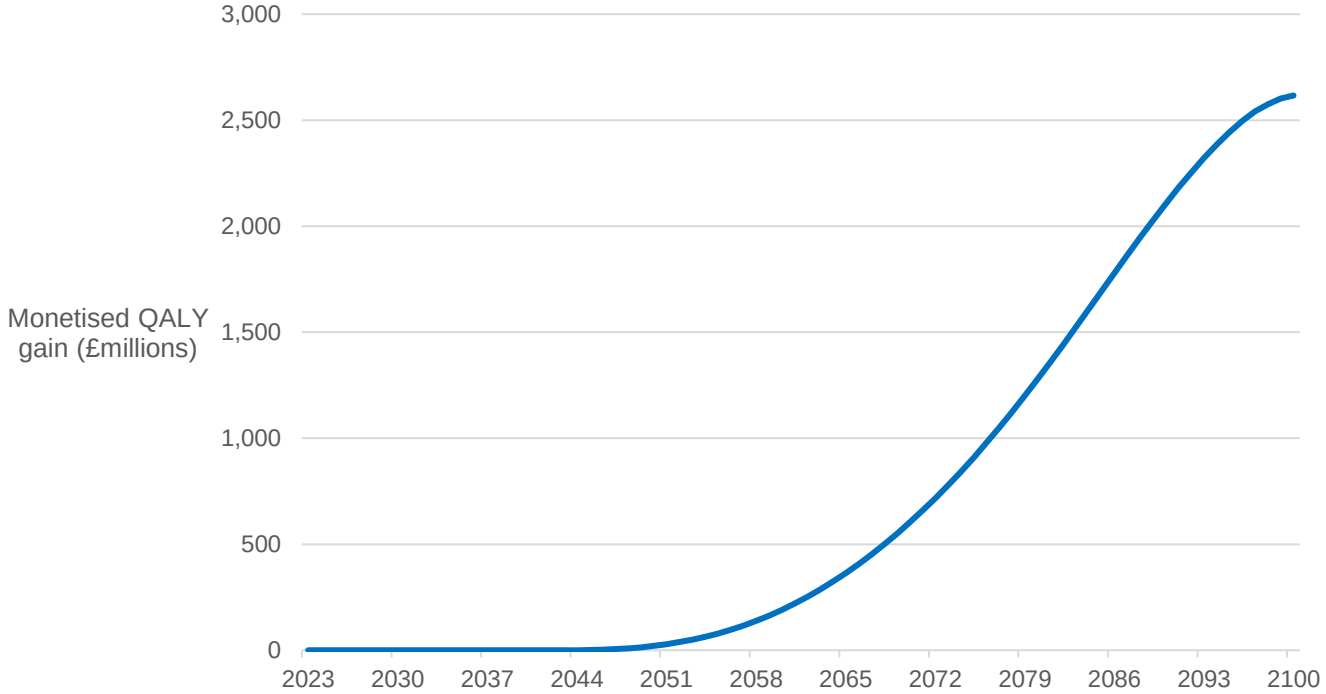
[140] NHS. Quit smoking, Stopping smoking for your mental health, Prevention: Lung Cancer.

[141] Sullivan and others. Catalogue of EQ-5D scores for the United Kingdom.. Note that utility scores are a measure of health-related quality of life, on a scale of 0 to 1 where 1 represents full health.

associated with a quality adjusted life year (QALY), set at £70,000 in HMT Green Book guidance. The health benefits associated with the central scenario are estimated based on the number of deaths avoided relative to the baseline each year. Future years health benefits are discounted at a rate of 1.5% in line with The Green Book[142].

178. Due to the long-term nature of smoking and smoking related mortality, no health benefits would be expected until 2044. However, between 2044 and 2056 (30 years post-implementation), the cumulative number of deaths avoided in England rises sharply to 2,579 in the model. The effects continue to accumulate faster all the way up to 2100 as subsequent cohorts benefit from the policy, with a cumulative 154,593 avoided in England by 2100. Figure 9 shows the annual monetised QALY gain in England compared with the baseline from 2023 to 2100.

Figure 9: Annual monetised QALY gain, central scenario versus baseline, 2023 to 2100.



179. Table 10 shows the estimated total monetised benefits as a result of the cumulative QALY gains from avoided mortality in England and the UK by 2056 and 2100.

Table 10: Monetised QALY benefits

	England	United Kingdom
2056	£404.6 million	£479.7 million
2100	£56.3 billion	£66.7 billion

Non-monetised benefits from a reduction in disease cases

180. The modelling estimates a significant number of disease cases avoided as a result of the central scenario. These reductions would provide a significant benefit to those individuals who would experience a better quality of life as a result, however, these benefits have not been monetised in this impact assessment. The estimates of the

[142] Any benefits realised over 30 years are discounted at a rate of 1.29% and at 1.07% if realised over 75 years, in line with The Green Book.

QALY gains therefore represents an underestimate of the health benefits accrued as a result of the policy.

Health benefits from a reduction in second hand smoke exposure

181. Any reduction in smoking rates and the number of smokers would result in a reduction in second-hand smoke (SHS) exposure. SHS is harmful to anyone, with children being particularly vulnerable to health conditions caused by SHS exposure.[143]

182. Previous impact assessments of tobacco control policies[144] reviewed the evidence available to quantify the economic impact of SHS exposure and estimate the benefits any reduction in exposure would bring.

183. In 2010, the Royal College of Physicians (RCP) identified links between SHS and a number of causes of morbidity in infants and children. The report estimated the cost of primary care and hospital admissions related to childhood disease caused by SHS to be £23.3 million a year in the UK[145]. Since 2010 and the introduction of further smoke-free legislation[146], children's exposure to SHS has decreased[147]. In 2018, the RCP produced the 'Hiding in plain sight' report[148]. This provided an estimate for the cost of admitted patient care in children attributable to smoking in England in 2015/16. The cost range was based on two alternative estimates of the percentage of children exposed to second hand smoke. They estimated that exposure of children to passive smoking costs the NHS in England between £5 and £12 million in hospital costs.

184. Although the evidence identified above presents a range of costs, it is not possible to quantify the specific impact the smokefree generation policy would have on the costs SHS exposure imposes on the NHS, and this has not been modelled. For this reason, these benefits remain a non-monetised benefit and are not included in the NPV or EANDCB.

Impact of tobacco litter

185. The latest estimates from the Department for Environment, Food & Rural Affairs (DEFRA) put the cost of cleaning up cigarette butts to local authorities at £40 million per year[149]. Keep Britain Tidy surveyed 7,200 sites across the country, with cigarette butts being the most littered item (found on 77% of sites).[150]

186. This option is expected to reduce the number of smokers. This would reduce the overall litter associated with tobacco as there would be fewer of packs of cigarettes and packs of hand rolling tobacco sold each year.

[143] NHS. Passive smoking. Reviewed 2022.
[144] DHSC. 2015. Standardised packaging of tobacco products impact assessment..
[145] Royal College of Physicians. 2010. Passive smoking is a major health hazard to children, says the RCP.
[146] Such as the Smoke-free (Private Vehicles) Regulations, 2015.
[147] NHS Digital. 2019. Smoking Drinking and Drug use among Young People in England, 2018.
[148] Royal College of Physicians. 2018. Hiding in plain sight.
[149] DEFRA, DHSC. 2021. Government explores next steps to clean up tobacco litter in England..
[150] Keep Britain Tidy. Litter in England: The local environmental quality survey of England 2019/20.

187. It has not been possible to quantify the specific impact of the smokefree generation policy on litter costs, and therefore remains non-monetised and is not included in the NPV of the policy or the EANDCB.

Wider societal benefits

188. There are a number of wider benefits associated with a reduction in smoking. Evidence from previous tobacco control interventions found the introduction of policies such as smokefree legislation in 2007 had significant impacts on healthcare usage, and more recent impact assessments for tobacco control policies have outlined the evidence of reducing the number of smokers on areas such as productivity.

189. The illnesses smoking causes has a significant impact on an individual's productivity. Firstly, smokers are more likely to have to take time off work due to sickness. Smokers have an absenteeism rate 33% higher than non-smokers and take an extra 2.7 sick days per year[151]. Secondly, Action on Smoking and Health's (ASH's) Smoking, employability, and earnings report shows that being a smoker is associated with a 7.5% lower probability of being employed[152]. Thirdly, there is evidence that smoking is related to presenteeism[153], the practice of going to work despite poor health, resulting in subpar performance.

190. Previous impact assessments have quantified benefits from fewer smokers at work as a result of the policies. Standardised packaging of tobacco was expected to provide £900 million in benefits as a result of fewer smokers at work. This was based on the estimated productivity loss per smoker (as time lost due to smoking) and the average hourly wage, then multiplied by the number of quitters as a result of the policy. However, the evidence these estimates are based on is from 2007.

191. A reduction in the number of smokers would have an impact on the NHS. In 2019/20 there were an estimated 448,034 hospital admissions attributable to smoking. The overall cost to the NHS is estimated to be £1.9 billion a year[154]. Evidence found a statistically significant impact on the number of hospital admissions due to a reduction in smoking as a result of smokefree legislation in 2007, therefore any reduction in the number of smokers would reduce the cost of smoking to the NHS.

192. A reduction in the number of smokers would also have an impact on the social care system and reduce the cost to society of smoking related fires.

193. In 2023, ASH published estimates of the wider societal costs of smoking in England[155]. Their report put the estimated cost of smoking at £17 billion a year, made up of a range of different costs. These were the productivity, healthcare, social care, and fire costs.

[151] Weng and others. 2012. Smoking and absence from work: systematic review and meta-analysis of occupational studies.
[152] Action on Smoking and Health. 2020. Smoking, employability, and earnings.
[153] Lee and others. 2021. Impacts of heavy smoking and alcohol consumption on workplace presenteeism.
[154] Action on Smoking and Health. 2023. £14bn a year up in smoke – economic toll of smoking in England revealed.
[155] Action on Smoking and Health. 2023. £14bn a year up in smoke – economic toll of smoking in England revealed..

194. At the time of this analysis the estimates from ASH were identified as the best and most up to date available for the different costs of smoking to society. Below is a summary of the methodology and data used to estimate each component.

- Productivity costs – The estimate for the cost of smoking on productivity comprises lost productivity due to smoking-related early deaths (valued at the income lost to those dying prematurely), reduced employment levels for smokers compared to non-smokers, and reduced earnings for smokers compared to non-smokers.

  The estimate for the cost of lost productivity due to smoking-related early deaths is based on the years of potential productivity lost to smoking-attributable early deaths, and distribution of earnings from employment and self-employment in the UK. The years of potential productivity lost to smoking-attributable early deaths is based on data on smoking attributable mortality from OHID local tobacco control profiles[156], labour market statistics from ONS[157], and average remaining years in employment for non-smokers in employment from an analysis of micro data from the Understanding Society (USoc) survey[158]. The distribution of earnings is derived from Family Resources survey[159] micro data.

  The estimates for the costs of smoking to productivity from reduced employment levels and earnings are based on data from the USoc survey. The data from the USoc survey are used in regressions to estimate the relationship between earnings, employment, and smoking status. The analysis attempts to control for other factors that affect people's earnings and likelihood of being employed, such as, age, gender, ethnicity, and education.

- Healthcare costs – The ASH estimate for the cost of smoking to the NHS is based on the estimate by DHSC for the 2017 tobacco control plan[160], combined with new estimates from Public Health England for hospital admissions attributable to smoking[161]. Given the DHSC estimate was from 2015, further adjustments have been applied to account for recent changes in NHS costs, population sizes and the distribution of ex-smokers.

- Social care costs – The costs of smoking to social care covers the cost to local authorities of having to provide both care in a person's home (domiciliary care) and residential care. The cost is estimated based on data on smoking status and receipt of social care services from two English datasets: the English Longitudinal Study of Ageing (ELSA)[162] and the Health Survey for England (HSE)[163]. The data from these datasets are used in regressions to estimate the relationship between smoking status and the need for social care. The analysis

[156] OHID. Local Tobacco Control Profiles - OHID (phe.org.uk)
[157] ONS. Employment and labour market.
[158] Understanding Society. Main survey.
[159] DWP. Family Resources Survey - GOV.UK (www.gov.uk).
[160] DHSC. 2017. Smoke-free generation: tobacco control plan for England.
[161] PHE. 2021. Response to consultation on proposed changes to the calculation of smoking attributable mortality and hospital admissions.
[162] English Longitudinal Study of Aging. The English Longitudinal Study of Ageing (ELSA).
[163] NHS Digital. Health Survey for England.

attempts to control for other factors that affect people's use of social care, such as, age, gender, family composition, and health status.

- Fire costs – The cost of smoking related fires comprises the cost of fatalities, injuries, property damage, and response costs for fires caused by smoking. The estimates for each component are largely based on data from government Fire Statistics[164] and a report on the 'Economic and social cost of fire'[165].

195. We recognise that there are limitations with these estimates from ASH. For example, the estimate of the costs of smoking to productivity may be an overestimate as the regressions it was based on may not have controlled for all the factors that could influence both smoking and reduced levels of employment or earnings, thus appearing to suggest these reduced levels are entirely due to smoking. On the other hand, the estimated cost of social care could be considered an underestimate as it does not include the cost of unmet social care needs for smokers, which ASH estimates suggest could be as high as £14 billion[166].

196. As the estimates from ASH were the best and most up to date available for the costs of smoking to society at the time of this analysis, they have been used to estimate the wider societal benefits associated with the central scenario compared with the baseline. The approach is similar for each of the individual cost elements.

197. Based on the estimated number of smokers and former smokers in 2023, a unit cost is produced for productivity, healthcare, and social care. The costs of smoking related fires are applied only to current smokers. The number of current smokers in the model in 2023 is 5,894,297, and the number of former smokers is 11,096,889. Table 11 shows the wider societal costs considered in this impact assessment, uplifted to 2027 prices by total annual cost and the unit cost applied to particular populations.

Table 11: Estimated societal costs and cost per individual in the relevant population

Cost	Population	Total annual cost (£, 2027 prices)	Unit cost (£)
Productivity cost	Smokers and former smokers	15,238,786,373	897
Healthcare cost	Smokers and former smokers	2,022,098,806	119
Social care cost	Smokers and former smokers	1,211,589,319	71
Fire cost	Smokers	356,989,279	61

198. To estimate the benefits accrued by the central scenario compared with the baseline, the difference in number of smokers and former smokers each year (where relevant) between the central scenario and baseline is multiplied by the unit cost. This provides

[164] Home Office. Fire statistics data tables - GOV.UK (www.gov.uk).
[165] Home Office. 2023. Economic and social cost of fire.
[166] Action on Smoking and Health. 2021. The cost of smoking to the social care system.

the annual benefit as a result of the central scenario, which are then added together to provide the cumulative benefits by 2056. Future years are discounted in line with HMTs Green Book at a rate of 3.5%[167].

Productivity gains as a result of fewer smokers

199. Productivity benefits are assumed to apply to smokers and former smokers, with a productivity unit cost of £897 associated with being a smoker or former smoker. In 2056, in the modelled central scenario, there would be 2,910,852 fewer smokers and former smokers in England compared with the baseline. Table 12 shows the estimated cumulative productivity benefits in England and the UK by 2056 and 2100 as a result of this many fewer smokers and former smokers.

Table 12: Productivity gains as a result of fewer smokers

	England	United Kingdom
2056	£20.7 billion	£24.6 billion
2100	£48.8 billion	£57.9 billion

Reduction in healthcare costs

200. The benefits from a reduction in healthcare costs are assumed to apply to smokers and former smokers, with an additional unit cost for healthcare of £119 associated with being a smoker or former smoker. In 2056, in the modelled central scenario, there would be 2,910,852 fewer smokers and former smokers in England compared with the baseline. Table 13 shows the estimated cumulative reduction in healthcare costs in England and the UK by 2056 and 2100 as a result of this many fewer smokers and former smokers.

Table 13: Reduction in healthcare costs

	England	United Kingdom
2056	£2.8 billion	£3.3 billion
2100	£6.5 billion	£7.7 billion

Reduction in social care costs

201. The benefits from a reduction in social care costs are assumed to apply to smokers and former smokers, with an additional unit cost for social care of £71 associated with being a smoker or former smoker. In 2056, in the modelled central scenario, there would be 2,910,852 fewer smokers and former smokers in England compared with the baseline. Table 14 shows the estimated cumulative reduction in social care costs in England and the UK by 2056 and 2100 as a result of this many fewer smokers and former smokers.

Table 14: Reduction in social care costs

	England	United Kingdom
2056	£1.6 billion	£2.0 billion
2100	£3.9 billion	£4.6 billion

[167] Any benefits realised over 30 years are discounted at a rate of 3.0% and at 2.5% if realised over 75 years, in line with The Green Book.

Reduction in fire costs

202. The benefits from a reduction in fire costs associated with smoking are assumed to apply to smokers, with an additional unit cost for fires associated with smoking of £61 associated with being a smoker. In 2056, in the modelled central scenario, there would be 1,700,779 fewer smokers in England compared with the baseline. Table 15 shows the estimated cumulative reduction in social care costs in England and the UK by 2056 and 2100 as a result of this many fewer smokers.

Table 15: Reduced fire costs

	England	United Kingdom
2056	£0.9 billion	£1.0 billion
2100	£1.9 billion	£2.3 billion

Total cumulative wider societal benefits

203. Figure 10 shows the total cumulative wider societal value gained in England for all of the considered costs associated with smoking. Table 16 shows the estimated cumulative wider societal benefits in England and the UK by 2056 and 2100.

Figure 10: Cumulative wider societal value gained, central scenario vs baseline.

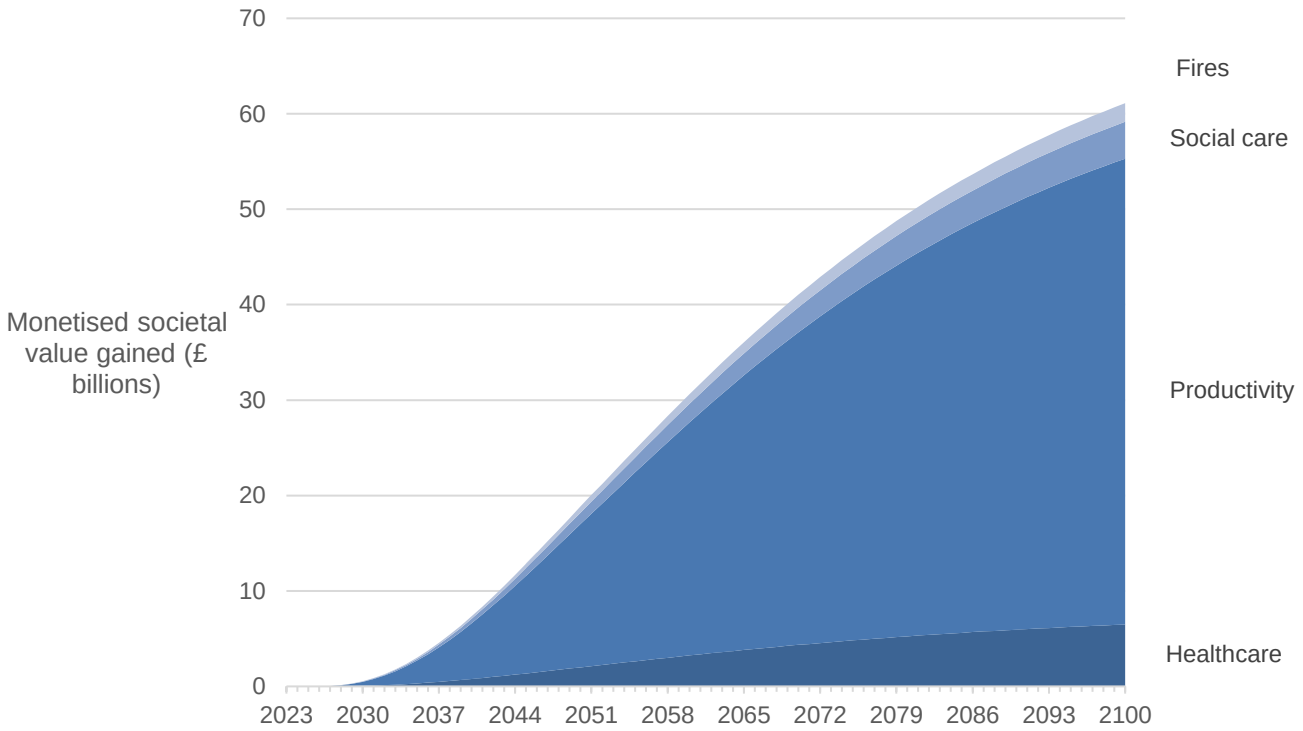


Table 16: Total cumulative wider societal benefits

	England	United Kingdom
2056	£26.0 billion	£30.8 billion
2100	£61.1 billion	£72.4 billion

Retailers

Numbers of premises that sell cigarettes and tobacco

204. We estimate, based on evidence from the Standardised Packaging of Tobacco impact assessment[168], that around 46% of tobacco sales are through small and micro businesses[169] (See more discussion in the Small and Micro Business Assessment section).

205. We are not aware of more detailed data on the cigarette retail market, but more general figures do exist on the numbers of different types of retail premises in the UK. This gives an indication of the distribution of cigarette purchases across different types of shops. Many of these retailers will sell tobacco, but the proportion that do is not known.

206. Data we have identified suggests that in the UK there are:

- 49,388 convenience stores[170], of which 70% are independently operated and 7,398 are petrol station forecourt shops[171].
- 5,944 Supermarkets.[172, 173]

207. As we do not have data on the proportion of these stores that sell tobacco, we have assumed that all 55,332 in the UK do.

Cost to check people's age

208. This option may cause an increase in the time it takes for retailers to serve customers, since more customers may have to prove their age. It can become more difficult to tell people's age as they get older, so as the minimum age of sale increases over time, there could be a larger cohort of customers whose IDs need to be checked.

209. The ONS reports the proportion of smokers who fall into different age categories. From this, it is possible to estimate the proportion of cigarettes and hand rolling tobacco (HRT) that are bought by different age groups. Current guidance states that all customers who look 25 or younger should have to prove their age[174,175]. We estimate that the proportion of cigarettes and HRT transactions by 18 to 25 years olds is around 10% of the total.

210. There is significant uncertainty over the impact the legislation would have on the age range of people that would need to be checked when making a sale. To estimate how much this could cost retailers we assume that, under the new rules, retailers would check the ages of customers 10 years older than the minimum age. This would represent around 20% of smokers - a net increase of 10 percentage points. Although

[168] Department of Health. 2015. Standardised packaging of tobacco products impact assessment: Specific Impact Tests.
[169] Euromonitor International. 2011. Cigarettes in the United Kingdom.
[170] Association of Convenience Stores. 2023. The Local Shop Report 2023.
[171] Association of Convenience Stores. 2023. Forecourt Report 2023.
[172] IGD. 2019. UK Grocery Store Numbers 2018.
[173] Data from 2018 as most recent we have been able to obtain.
[174] Association of Convenience Stores. Challenge25.
[175] In Scotland, this is an offence under Section 4B of the 2010 act; if a person carries on a tobacco or nicotine vapour business and fails to operate an age verification policy.

we expect smoking prevalence, and hence sales, to fall more quickly when the smokefree generation legislation is implemented, compared to the do nothing option, retailers will still need to check a wider age range of consumers, and so we estimate that the number of checks will increase overall.

211. We have not identified any evidence on the time it takes for retailers to check customers IDs to verify their ages. However, assumptions on how long this may take has been included in previous impact assessments. In 2015, the Nicotine Inhaling Products impact assessment assumed it would take 15 seconds per age verification check. More recently, in 2018, the impact assessment for Banning the Sale of Energy Drinks to Children[176] assumed it would take 30 seconds per age verification check.

212. We have also not identified any evidence to suggest that the amount of time it takes to check a person's age varies between the types of businesses that consumers purchase tobacco from. As a result, we have assumed that the time it takes to check a person's age is the same in all types of businesses.

213. Given the lack of evidence on the amount of time it will take for each additional age verification check because of this policy, we have had to make an assumption in order to be able to produce an estimate of the overall costs. This assumption is based on the most recent impact assessment we have identified that has considered this cost and have assumed an average of 30 seconds per transaction where the age of customers is up to 10 years older than the minimum age.

214. The cost to retailers of this time is estimated to be the same as their wages, as stated in the ONS Annual Survey of Hours and Earnings (ASHE)[177]: £14.54 for retail managers, £12.83 for shopkeepers and owners, and £10.00 for retail cashiers (2022). To this, we apply an uplift of 19% to account for non-wage labour costs[178]. We assume that the transactions are distributed across small shops and supermarkets in proportion to the number of staff that work in each, and that in small shops, managers and shopkeepers conduct sales as well as cashiers.

215. To estimate the cost to retailers of the additional time to check people's age, we combine these figures with our projections of future cigarette and HRT sales. Table 17 shows the estimated discounted cost to retailers of the additional time to check people's age in England and the UK in 2056.

Table 17: Cost to check people's age

	England	United Kingdom
2056	£98.5 million	£116.8 million

[176] DHSC. 2018. Banning the Sale of Energy Drinks to Children Consultation Stage Impact Assessment.
[177] ONS. 2023. Annual Survey of Hours and Earnings (ASHE).
[178] Based on data on the non-wage percentage of labour costs from ONS. 2020. Index of Labour Costs per Hour, UK: July to September 2020.

216. There is uncertainty when assessing the value to retailers of any small amounts of extra time spent on tasks such as proof of age. Many 30 seconds across England in one day summing to an hour or two in total for the entire country is not the same as one retailer gaining an hour or two of work from an employee. On the one hand, there is an argument that most of these extra seconds are not likely to result in any extra costs since the retailer could not have made productive use of these extra seconds of time. On the other hand, there is the chance that this extra time may have a disproportionate effect, since it may feed into wider step change decisions, such as employing another member of staff. If this is the case, it may place a larger burden on smaller businesses that employ fewer people. However, we have not identified any evidence to quantify this impact, or how the impact varies between different size businesses.

217. There is some limited evidence to suggest that retailers do not view the process of age checking as excessively burdensome. A survey of small retailers commissioned by ASH[179] in 2022 found that 83% supported the introduction of mandatory age verification for anyone under 25, with only 5% opposing. Whilst there could be a number of reasons for their support, it does suggest that they do not find the process of checking people's age to be too onerous.

Cost of staff training and awareness

218. It is anticipated that there will be a cost for retailers in terms of training staff and raising awareness of the new age of sale restriction and the products range to which it applies. The Bill will make it an offence for anyone born on or after 1 January 2009 to be sold tobacco products and to purchase tobacco products on behalf of someone born on or after 1 January 2009 ('proxy purchasing'). Although it will mean the legal age of sale effectively increases by one year each year, the regulations will not change every year. This means it will be a one-off cost, as opposed to a recurring annual cost, for retailers in terms of training staff and raising awareness of the new age of sale restriction and the products range to which it applies.

219. We assume that there will be one manager or shopkeeper in each tobacco retailer that will need to familiarise themselves with the new legislation and guidance, and that they will need to spend time disseminating this information to their staff.

220. This cost is estimated by multiplying the time taken by the number of staff involved and their wages.

221. We estimate the time taken for managers to familiarise themselves with the legislation based on typical technical text reading speeds (75 words per minute[180]) and the length of guidance documents produced for similar recent legislation (2800 words, Tobacco and Vapes guidance document[181]). This equates to around 1 hour 6 minutes.

[179] Action on Smoking and Health, 2022. Regulation is not a dirty word: Local retailers' views of proposals for new tobacco laws.
[180] EFTEC. 2013. 'Evaluating the cost savings to business from revised EA guidance – method paper' as quoted in BEIS. 2017. Business Impact Target: Appraisal of guidance: assessments for regulator-issued guidance.
[181] Business Companion. Tobacco and vapes.

222. We assume that once they understand the changes, it will take them 30 mins to communicate this to staff, who therefore have to spend 30 mins listening to it.

223. Data from the Association of Convenience Stores[182] and IGD Retail Analysis[183] shows that in the UK, there were 49,388 convenience stores in 2023, including petrol station forecourts, and 5,944 Supermarkets, excluding discounters that generally don't sell tobacco, in 2018 (the latest data we were able to obtain).

224. We do not know what proportion of these sell tobacco, so we have assumed all do. Based on this we estimate there are 55,332 retailers in the UK that sell tobacco. Adjusting this based on the proportion of the UK population accounted for by England (c.84%[184]), we estimate that there are 46,672 tobacco retailers in England.

225. There are an estimated 405,000 convenience store jobs in the UK[185], which, adjusted for the proportion of the population in England, gives an estimated 341,616 convenience store jobs in England[186]. It is assumed that each store has 1 manager. The ACS Local Shop Report 2023 put the number of convenience stores in mainland UK to be 49,388 in 2023[187], based on proportion of UK population in England this is equivalent to 41,659 convenience stores in England. Therefore, there are an estimated 49,388 convenience store managers in the UK and 41,659 in England that would need to read the new guidance. Subtracting the estimated number of convenience store managers from the estimated total number of convenience store jobs means there are an estimated 355,612 cashiers in convenience stores in the UK and 299,957 in England that the managers would have to convey the new regulations to.

226. There are an estimated 5,944 supermarkets in the UK, employing 871,429 people[188], which, adjusted for the population in England, gives an estimated 735,047 supermarket jobs in England. Assuming that each store has 1 manager, it is estimated that there are 5,944 managers in supermarkets in the UK and 5,014 in England that would have to read the new regulations. Subtracting the estimated number of supermarket managers from the estimated total number of supermarket store jobs in means there are an estimated 865,485 cashiers in supermarkets in the UK and 730,033 in England that the managers would have to convey the new regulations to.

227. The ONS Annual survey of households and earnings reports the median salaries of retail managers, staff, and shopkeepers[189]. Based on the average of the median wage from this data for 'Managers and Directors in Retail and Wholesale' and 'Shopkeepers and owners - retail and wholesale,' the estimated hourly wage for a manager or shopkeeper in a shop that sells tobacco is £13.69. This is uplifted by 19%[190] to account for non-wage labour costs to £16.25. Using the same dataset, the median hourly wage

[182] Association of Convenience Stores. 2023. The Local Shop Report 2023.
[183] IGD. 2019. UK Grocery Store Numbers 2018.
[184] ONS. 2022. Population estimates for the UK, England, Wales, Scotland and Northern Ireland.
[185] Statista. 2022. Average number of convenience store jobs in the United Kingdom (UK) from 2015 to 2023.
[186] Statista. 2022. Average number of convenience store jobs in the United Kingdom (UK) from 2015 to 2023.
[187] Association of Convenience Stores. 2023. The Local Shop Report 2023.
[188] Living Wage Foundation. 2021. Over two-fifths of all supermarket workers earn below the real Living Wage.
[189] ONS. 2023. Annual Survey of Hours and Earnings (ASHE).
[190] Based on data on the non-wage percentage of labour costs from ONS. 2020. Index of Labour Costs per Hour, UK: July to September 2020.

for ‘Retail cashiers and check-out operators’ is £10.00, which, uplifted by 19% to account for non-wage labour costs, is £11.88[191].

228. To estimate the cost to retailers to train staff and raise awareness of the new age of sale restriction and the products range to which it applies, we multiply the total time taken for managers to read the new guidance, convey it to their staff, and for staff to listen, by the hourly wage for each group. Table 18 shows the estimated one-off cost to retailers in England and the UK.

Table 18: Cost of staff training and awareness for retailers

	England	United Kingdom
2027	£7.6 million	£9.0 million

Cost to retailers of putting up new signage

229. Retailers may need to pay for new signs to reflect the new age restrictions. This is likely to take a very similar form to the current signs.

230. To estimate the cost to retailers of putting up new signage, we multiply our estimate of the number of retailers that sell tobacco in England (46,672) by the typical cost of a new sign (£4.00[192]). Table 19 shows the estimated one-off cost to retailers in England and the UK.

Table 19: Cost to retailers of putting up new signage

	England	United Kingdom
2027	£200,000	£230,000

Profits decreased due to reduced tobacco sales from fewer smokers

231. A reduction in the number of smokers would result in a reduction in sales of tobacco. As a result, retailers, wholesalers, and manufacturers of tobacco would experience a reduction in profits from tobacco sales.

232. The number of fewer packs sold is based on the effect size. In the modelled baseline, the number of people smoking is expected to fall irrespective of any new policy implemented. The cost to business is therefore based on the difference in the number of smokers in the central scenario compared to the baseline.

233. The Health Survey for England[193] (HSE) found that in 2021, the median consumption was around 9 cigarettes a day. Adult Smoking Habits in the UK found a similar level of consumption, with consumption increasing with age. Based on the median figure from the HSE of 9 cigarettes a day, the average smoker is estimated to smoke around 3,285

[191] Does not sum due to rounding.
[192] Compliance Posters UK Store product listing through Amazon. IT IS ILLEGAL TO SELL TOBACCO PRODUCTS TO ANYONE UNDER THE AGE OF 18 - Children and Families Act 2014 POSTER - A5 SIGN.
[193] NHS Digital. 2022. Health Survey for England, 2021 part 1.

cigarettes a year. For those smoking factory-made packs of cigarettes, with a minimum pack size of 20, this would be roughly 164 packs a year.

234. In the central scenario, there are fewer smokers each year when compared to the baseline. Therefore, retailers lose out on profits each year for every person who does not take up smoking. Based on the number of fewer smokers[194], an estimated cumulative 4 billion fewer factory-made packs of cigarettes will be sold between 2027 and 2056. Future years costs are discounted at a rate of 3.5% in line with The Green Book.

235. Evidence suggests profit margins for retailers (particularly small retailers) on tobacco is small. An ASH report from 2016 found an average profit margin of 6.6%[195] on tobacco products, based on 1,400 small retailers from across the UK, using a specific electronic point of sale system. The sample included affiliated and unaffiliated shops, with profit margin based on all forms of tobacco (cigarettes, hand rolling tobacco, cigars, and other types of tobacco). Another paper[196] found retailers (based on a sample size of 62 retailers) had profit margins of less than 6%, with the most common response being 4 to 6%. As we have not been able to identify more up to date evidence, we have used the estimate from the evidence with the larger and more representative sample of retailers of 6.6% as the profit margin for retailers to estimate lost profit for retailers.

236. We have used the average price of cigarettes and applied this to consumption values to estimate the loss in profit for retailers. This reduces the risk of underestimating the impact of lost profits of retailers. Based on data from HMRC, cigarettes and hand rolling tobacco together make up the vast majority of tobacco duty receipts and clearances (over 97% of duty receipts and 97% of clearances[197]). Cigarettes are more expensive per cigarette than hand rolling tobacco[198]. Therefore, using the average price of cigarettes and applying this to consumption values reduces the risk of underestimating the impact of lost profits of retailers.

237. The average price of a 20-pack of cigarettes in 2023 after the March duty increase was £14.45[199]. Uplifted to 2027 prices, this is £15.27, producing an estimated profit loss per pack of £0.95 for cigarettes.[200]

238. Therefore, based on an estimated 4 billion fewer factory-made packs of cigarettes sold between 2027 and 2056, Table 20 shows the estimated total costs in lost profits to retailers in England and the UK (borne by all retailers of tobacco, and over 30 years).

Table 20: Profits decreased for retailers due to reduced tobacco sales from fewer smokers

	England	United Kingdom
2056	£1.93 billion	£2.29 billion

[194] See *Effect size.*
[195] Action on Smoking and Health. 2016. Counter Arguments – How important is tobacco to small retailers?
[196] Hitchman and others. 2016. Small retailers' tobacco sales and profit margins in two disadvantaged areas of England.
[197] HMRC. Tobacco Bulletin Accessed December 2023.
[198] University of Bath. 2018. Study calls for tax hike on Roll-Your-Own cigarettes to deter smoking.
[199] ONS. RPI: Average price – Cigarettes 20 king size filter.
[200] Calculated as the difference between the price, and the price divided by 1 plus the expected profit margin of 6.6%.

239. Alternative approaches to estimate the loss in profit to retailers are available. This includes considering the proportional decrease in the total number of smokers in the baseline and central scenario and applying this to total consumer expenditure on tobacco. However, this approach has not been used because a reliable estimate for total consumer expenditure on tobacco only, for England is not available. The closest estimates for total tobacco expenditure are UK wide and also include vapes[201], and disaggregation of the markets has not been possible at the time of this analysis.

240. For this reason, we consider the approach we have used the most accurate with the available data.

Increase in profits from less expenditure on tobacco

241. It is likely that losses estimated will at least in part be offset by increased profits on goods and services purchased in place of tobacco. Specifically for retailers, these goods will also likely carry a higher profit margin than tobacco.

242. It is also possible that there may be a displacement effect whereby tobacco sales increase for those who can still legally purchase tobacco if they want to purchase them for someone they know under the legal age of sale, such as a friend or partner. However, the size of any displacement effect of this policy is likely to be reduced by the Bill also making it an offence to purchase tobacco products on behalf of someone under the legal age of sale ('proxy purchasing').

Shisha bars

243. Shisha is smoking heated, specially prepared tobacco through a pipe. The sale would therefore be subject to this legislation in the same way that cigarettes and hand rolling tobacco are. In the consultation, respondents were asked whether they agreed or disagreed that all tobacco products, cigarette papers and herbal smoking products should be covered in the new legislation. Tobacco products includes shisha and 63.8% of those that responded to the question agreed with the proposed product scope, 30.7% disagreed and 5.5% said that they did not know. In 2016, the Health Survey for England[202] found that 1% of adults aged 16 and over had used shisha in the last month and that 15% had tried it at least once.

244. A significant proportion of shisha consumption takes place in shisha bars. Verified data on the number of shisha bars in England is not available, but an estimate from the vape retailer, Vape Club, suggests that the UK figure was 514 in 2022[203]. Adjusting this based on the proportion of the UK population accounted for by England (c.84%[204]) we estimate that there are 434 shisha bars in England.

[201] Statista. 2023. Revenue of the tobacco products market in the United Kingdom from 2014 to 2017..
[202] NHS Digital. 2018. Health Survey for England (HSE) 2016 use of hookah, shisha and chewing tobacco.
[203] As quoted in Wales Online. 2022.Shisha bars triple over the last decade, as experts warn of 'hookah sickness'.
[204] ONS. 2022. Population estimates for the UK, England, Wales, Scotland and Northern Ireland.

245. The costs estimated in this section relate to shisha bars. The costs to other shisha tobacco retailers and wholesalers are assumed to be included in those for general tobacco retailers and wholesalers, as estimated in the sections above.

Cost to check people's ages

246. As with cigarettes and other forms of tobacco, shisha bars may have to spend more time checking their customers ages if the range of ages they need to check is increased. Data on the number of shisha transactions is not available so it is not possible to produce a quantified estimate of this cost. However, given the relatively low number of shisha bars, and the very short time it takes to check someone's ID, this cost is likely to be low.

Cost of staff training and awareness

247. Shisha bar owners and managers, and their staff will need to familiarise themselves with the new legislation. As the guidance documents are likely to be the same as for other tobacco retailers, we assume it will take the same amount of time for them to read them (around 1 hour 6 minutes for managers to read the guidance and 30 minutes for them to pass the information to their staff). The ONS reports the wages of proprietors and staff in hospitality businesses[205]. We selected the roles most similar to those in shisha bars. In 2022, the median hourly wage of restaurant and catering establishment owners and managers was £12.55. The median wages of café staff were £9.56. We uplift these values by 19%[206] to account for non-wage labour costs such as pensions and national insurance. We assume that the average number of staff employed in each shisha bar is the same as the average number of staff employed in beverage serving businesses (16 full time and part time employees) [207]. As with other tobacco retailers, we assume that one owner or manager will need to read the guidance and then disseminate this information to all their staff.

248. To estimate the cost to shisha bars to train staff and raise awareness of the new age of sale restrictions and the products range to which it applies, we multiply our estimate of the number of shisha bars by the total time taken for managers to read the new guidance, convey it to their staff, and for staff to listen, by the hourly wage for each group. Table 21 shows the estimated one-off cost to shisha bars in England and the UK.

Table 21: Cost of staff training and awareness for shisha bars

	England	**United Kingdom**
2027	£46,000	£54,000

Costs to shisha bars to put up new signage

249. Shisha bars may need to pay for new signs to reflect the new age restrictions. This is likely to take a very similar form to the current signs.

[205] ONS. 2023. Earnings and hours worked, occupation by four-digit SOC: ASHE Table 14.
[206] Based on data on the non-wage percentage of labour costs from ONS. 2020. Index of Labour Costs per Hour, UK: July to September 2020.
[207] Based on Number of employees in beverage serving businesses UK and Number of beverage serving businesses UK

250. To estimate the cost to shisha bars of putting up new signage, we multiply our estimate of the number of shisha bars by the typical cost of a new sign (£4.00[208]). Table 22 shows the estimated one-off cost to retailers in England and the UK.

Table 22: Costs to shisha bars to put up new signage

	England	United Kingdom
2027	£1,700	£2,100

Profit decreased due to reduced sales

251. Data on the sales and profit margins of shisha bars is not available, so it's not possible to produce a robust estimate of the profit loss. To provide an illustration of the size of the possible profit loss for shisha bars, we can scale the profit loss from other tobacco retailers to the size of the shisha bar sector. This gives an illustrative estimated profit loss to shisha bars of £12 million in England and around £14 million in the UK over the 30 year appraisal period. As we have only been able to provide an illustrative estimate for the loss in profits to shisha bars, this cost has not been included in the NPV and EANDCB.

Wholesalers

Profits decreased due to reduced tobacco sales from fewer smokers

252. The methodology for estimating lost profits for wholesalers is the same as for retailers above, with the only change being the overall profit per pack lost.

253. Profit estimates for wholesalers is based on information obtained through the Standardised packaging of tobacco (SPoT) impact assessment consultation. This concluded the average profit for wholesalers to be £0.16 per pack. Uplifted to 2027 prices, this would be £0.21.

254. Therefore, based on an estimated 4 billion fewer factory-made packs of cigarettes sold between 2027 and 2056, Table 23 shows the estimated total costs in lost profits to wholesalers in England and the UK (borne by all wholesalers of tobacco, and over 30 years).

Table 23: Profits decreased for wholesalers due to reduced tobacco sales from fewer smokers

	England	United Kingdom
2056	£427.2 million	£506.4 million

Increase in profits from less expenditure on tobacco

255. It is likely that losses estimated will at least in part be offset by increased profits on goods and services purchased in place of tobacco.

[208] Compliance Posters UK Store product listing through Amazon. IT IS ILLEGAL TO SELL TOBACCO PRODUCTS TO ANYONE UNDER THE AGE OF 18 - Children and Families Act 2014 POSTER - A5 SIGN.

Manufacturers of tobacco and shareholders

Profits decreased due to reduced tobacco sales from fewer smokers

256. The methodology for estimating lost profits for wholesalers is the same as for retailers above, with the only change being the overall profit per pack lost.

257. Profit estimates for manufacturers are based on information obtained through the Standardised packaging of tobacco (SPoT) impact assessment consultation. For manufacturers this was £0.22 per pack of factory made cigarettes. In 2027 prices this is £0.29.

258. Therefore, based on an estimated 4 billion fewer factory-made packs of cigarettes sold between 2027 and 2056, Table 24 shows the estimated total costs in lost profits to manufacturers in England and the UK. However, these costs are assumed to be mostly borne by transnational tobacco companies not based in the UK. There are no major brands that still produce cigarettes in the UK[209].

259. Any information we have been able to find on the UK based tobacco product manufacturing sector shows that it is very small relative to the overall size of the UK tobacco product market and produces a diverse range of specialist products, such as, pipe tobacco and snuff, some of which is sold for export[210]. The only sector data we have been able to identify is from the ONS' Annual Business Survey[211] which for previous years has provided data on the number and turnover of UK based tobacco product manufacturers. According to the data, in 2018 and 2019 there were 9 enterprises manufacturing tobacco products in the UK. In 2018 the total turnover of these businesses was £13m. In 2019 it was £27m. This compares to an estimated revenue from tobacco product sales in the UK (from both UK and oversees manufacturers) of around £24bn[212]. In more recent years, the data in the survey has been supressed for confidentiality reasons, possibly due to the low number of businesses responding to the survey. Moreover, that survey data never included information on the proportion of turnover that was derived from UK sales as opposed to exports, which would be needed to estimate the proportion of these businesses turnovers that would potentially be affected by this policy. We have not been able to identify any other data that would allow us to estimate the loss in profit specifically to UK based tobacco manufacturers, such as, total revenue or profit margins. As a result, we have not been able to estimate the loss in profit for the limited number of small UK based tobacco manufacturers.

Table 24: Profits decreased for manufacturers due to reduced tobacco sales from fewer smokers

	England	United Kingdom
2056	£587.4 million	£696.4 million

[209] BBC. 2016. Last English-produced cigarettes made in Nottingham.
[210] For example, Gawith Hoggarth (https://www.gawithhoggarth.ltd/) and Chancellor Tobacco (HOME - The Chancellor Tobacco Company (chancellor-tobacco.com)
[211] ONS. 2023. Annual Business Survey: Non-financial business economy, UK: Sections A to S (2008 to 2021).
[212] Statista. 2024. United Kingdom (UK): tobacco products market revenue 2014-2027 | Statista

260. The profit losses are not considered to be in the NPV or EANDCB due to the cost being borne overwhelmingly by business not based in the UK and the fact that we are not able to estimate the impacts to the very small number that are.[213]

Increase in profits from less expenditure on tobacco

261. It is likely that losses estimated will at least in part be offset by increased profits on goods and services purchased in place of tobacco.

Tobacco transportation businesses

Profits decreased due to reduced tobacco sales from fewer smokers

262. We have provided an estimate for the impact this policy would have on tobacco wholesalers and manufacturers. However, it is possible that manufacturers and wholesalers do not act as the importer for all tobacco products in England and the UK. If this is the case, some haulage and transportation businesses that bring tobacco products into the country and distribute them to retailers would also indirectly experience a reduction in profits due to the reduction in the number of smokers and tobacco sales because of this policy.

263. Evidence from the University of Bath suggests that in the UK, there are 13 businesses involved in the logistics, transport, and warehousing of tobacco products[214]. This evidence does not provide a further breakdown of whether these businesses specifically provide logistical, transportation, or warehousing services, or if they provide a combination of all of them. It also includes some tobacco manufacturers, and some of these businesses may also be providing these services for tobacco wholesalers. As a result, it is not clear how many transportation businesses would be affected by this policy.

264. In addition, we have not identified any data or evidence on the profit margins for these businesses and specifically for the transportation of tobacco products.

265. At least some or all of this impact is likely to be offset by increased demand for haulage and transportation in other sectors that see higher sales as result of would-be smokers spending money on other goods instead.

266. Due to a lack of evidence on the number of transportation businesses affected by this policy and their profit margins, and the likely offsetting effects on other sectors, we have not quantified this indirect impact of the regulation and therefore it is not included in the NPV or EANDCB.

HMRC and Taxpayers

Reduction in tobacco duty receipts

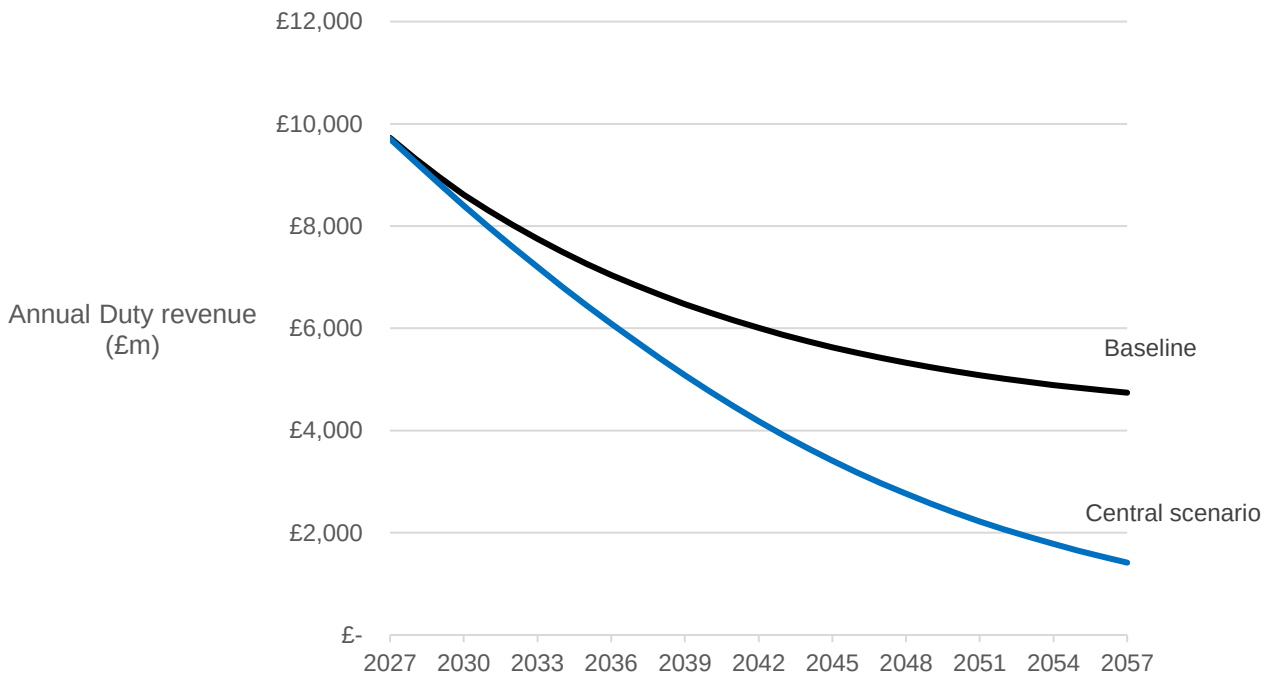
[213] RPC. 2020. RPC short guidance note on issues around defining a 'business'.
[214] Tobacco Tactics. 2021. Supply Chain Companies.

267. A reduction in the number of smokers would result in a reduction in sales of tobacco. This would also reduce the amount of tobacco tax and duty collected by HMRC.

268. The OBR published the Economic and Fiscal outlook, which includes forecasts for tobacco duty revenue.[215] This estimated that duty revenue in 2026/27 would be £9,800 million, and £9,700 million in 2027/28. Taking a weighted average[216] produces a 2027 estimated duty revenue of £9,725 million. In the baseline, smoking prevalence and the number of smokers is expected to fall irrespective of any new policy implemented. While tobacco has been subject to regular duty increases through the duty escalator, this is only in place until the end of the current Parliament. For this reason, duty rates are assumed to remain the same.

269. Duty revenue forecasts are for the UK. Therefore, when estimating the cost to England, estimates are adjusted based on the relative size of the population in England compared to the UK. Based on population estimates from ONS[217], England accounts for around 84% of the population of the UK. Therefore, all the England estimates have been scaled down by 0.84[218] to provide estimates for the loss in duty revenue for England.

Figure 11: Estimated annual duty revenue, baseline and central scenario, 2057



270. Duty revenue in the baseline is assumed to fall proportionally in line with the proportional decrease in the number of smokers each year when compared with 2027. For example, the number of smokers in the baseline in 2030 is 4,110,095 – 89% of the 2027 figure, therefore estimated duty revenue is assumed to be 89% of 2027 figure.

[215] OBR. 2023. Economic and fiscal outlook - March 2023..
[216] 1 quarter from 2026/27 and 3 quarters from 2027/28.
[217] ONS. 2022. Population estimates for the UK, England, Wales, Scotland and Northern Ireland.
[218] Calculated by dividing the population of England by the population of the UK.

271. To estimate the loss in duty as a result of the central scenario, the same assumptions of a decrease in revenue proportionally based on the number of smokers is applied. The loss in duty is taken relative to the baseline. Figure 11 shows the estimated baseline duty revenue each year alongside the estimated central scenario duty revenue collected between 2027 and 2056.

272. Future years costs are discounted at a rate of 3.5% in line with The Green Book. Table 25 shows the estimated reduction in tobacco duty receipts over 30 years in the UK.

Table 25: Reduction in tobacco duty receipts

	England	United Kingdom
2056	£22.0 billion	£26.1 billion

273. This reduction in the tobacco 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 take up smoking 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.

274. On this basis, and in line with HMTs Green Book[219], the reduction in tobacco duty has not been included in the NPV. It also has no impact on businesses, so has not been included in the EANDCB.

275. We recognise that the estimated reduction in tobacco duty revenue over the appraisal period is much larger than any of the other costs of this option. However, it should be noted that even if this cost was included in the NPV, the option would still have a positive NPV of around £60 billion up to 2100.

Department of Health and Social Care

Communication costs

276. This policy would likely require an effective communications campaign, to ensure that retailers, enforcers, and smokers know about the change.

277. When the legal age of sale for tobacco products was raised from 16 to 18 in 2007, it was estimated, in the accompanying impact assessment, that there would be a one-off cost to DHSC of £1 million for such a communication campaign[220]. This cost was based on assessment of the costs for England and Wales. However, we expect that the cost of a communication campaign for England only would have been similar.

278. Although this policy would raise the legal age of sale by one-year every year, we anticipate that only one communication campaign would be required to inform

[219] HMT. 2022. The Green Book: appraisal and evaluation in central government.
[220] EXPLANATORY MEMORANDUM TO THE CHILDREN AND YOUNG PERSONS (SALE OF TOBACCO ETC.) ORDER 2007 No.767.

stakeholders that from 1 January 2027 no one born on or after 1 January 2009 can be sold tobacco products.

279. We expect that it would be a similar cost to DHSC for a communication campaign for this policy. Adjusting £1 million in 2007 to 2027 prices is around £1.5 million. Table 26 shows the estimated cost to DHSC of an effective communications campaign, to ensure that retailers, enforcers, and smokers know about the new policy.

Table 26: Communication costs

	England	United Kingdom
2027	£1.5 million	£1.8 million

280. This would likely be covered by the additional funding the government announced in October 2023 for new national anti-smoking campaigns (£5 million in year one and £15 million thereafter).[221]

Local Authorities

Enforcement costs – Underage sales

281. Local authority Trading Standards will be responsible for checking compliance with the new law on the legal age of sale for tobacco.

282. We expect there to be minimal additional costs for local authorities as a result of this policy. Local authorities already check compliance with the current legal minimum age of sale for tobacco of 18 years old through activities including underage sales test purchases and monitoring of public complaints through the Citizens Advice portal.

283. In England, under section 7 of the Children and Young Persons Act 1933[222], local authority Trading Standards officers, on conviction in a magistrate's court, are able to impose a fine of up to £2,500 for an underage sale of a tobacco product or cigarette papers. Local Trading Standards can already issue a fixed penalty of £90 for a proxy purchase of tobacco and nicotine products under The Proxy Purchasing of Tobacco, Nicotine Products etc. (Fixed Penalty Notice) (England) Regulations 2015[223].

284. With the new legal age of sale, local authorities would need to check the same number of businesses, and we expect it to take the same amount of time to investigate any potential offences.

285. Local authorities may incur some additional costs to familiarise themselves with the new law, but do not expect this to be a significant cost.

286. To help support the enforcement of underage sales of tobacco products, an extra £30 million will be provided to enforcement agencies every year for the next five years which

[221] DHSC. 2023. Stopping the start: our new plan to create a smokefree generation.
[222] Children and Young Persons Act 1933 (legislation.gov.uk).
[223] The Proxy Purchasing of Tobacco, Nicotine Products etc. (Fixed Penalty Notice) (England) Regulations 2015.

will help strengthen tobacco and vaping enforcement work. As part of this funding, HMRC and Border Force's 'Stubbing out the problem: A new strategy to tackle illicit tobacco' is UK wide, and is supported by over £100 million new funding over the next 5 years to boost HMRC and Border Force enforcement capability. The allocation of funding for country-specific services in Scotland, Wales, and Northern Ireland, such as for local authority trading standards services, is the responsibility of relevant ministers in those countries.

287. As it is local authorities that will be responsible for checking compliance with the new law on the legal age of sale for tobacco, we do not anticipate any additional enforcement costs for the police.

Additional quitters engaging with stop smoking services

288. It is possible that legislating for a smokefree generation might plausibly lead to an increase in the number of people that attempt to quit smoking. For example, the communications campaign to explain the new law may provide more information on the health risks of smoking and encourage some current smokers to attempt to quit.

289. If this is the case, smokers could attempt to quit through a range of different methods, including using local stop smoking services. These would impose a burden on local authorities to provide support and pharmacotherapies to smokers attempting to quit.

290. The latest data from local stop smoking services shows that between April 2022 and March 2023, 176,566 people set a quit date with services in England. Of those, 95,400 were successful in quitting smoking.[224] The average cost per quitter[225] in 2022/23 was around £681, however this varies by local authority.

291. As we do not have evidence on the number of people that will quit as a result of this policy and how many of them will use local stop smoking services to do so, we have not been able to quantify this cost to local authorities.

292. It should be noted that in October 2023, the government announced it is investing an additional £70 million per year to support local authority-led stop smoking services – more than doubling current spend from £68 million per year. This additional funding aims to support around 360,000 people to quit per year.

Retail workers

Increased aggression and abuse towards retail workers

293. Violence and abuse towards retail workers has been a concern for the retail sector for several years. Surveys conducted by the retail sector show that levels of violence and abuse in the sector remains high.

[224] NHS Digital. 2023. Statistics on NHS Stop Smoking Services in England - April 2022 to March 2023 (Q4, Annual).
[225] Across all Local Authorities, including pharmacotherapy costs, but excluding nil returns. Cost per quitter is estimated as the total spent divided by the number of successful quitters.

294. The British Retail Consortium 2023 Crime Report[226] showed incidents of violence and abuse stood at 867 incidents a day (316,000 in total) in 2021 to 22. Whilst this was down from 1,301 the previous year at the height of the pandemic, it was nearly double the pre-pandemic figure of 455 in 2019 to 20.

295. The Association of Convenience Stores (ACS) Crime Report 2023[227], which represents smaller and independent stores, estimated over 41,000 incidents of violence in the sector and over 750,000 incidents of verbal abuse over a 12-month period.

296. We recognise that, because this policy will increase the number of people that cannot legally be sold tobacco and could lead to more people being asked for ID when purchasing tobacco, there is a risk that it will increase the number of customers that are abusive and aggressive towards retail workers.

297. The government is clear that violent and abusive behaviour towards any worker, particularly those who provide a valuable service to the public, is never acceptable. The government has already taken a significant step to introduce a statutory aggravating factor for assault against those who are serving the public, via the Police, Crime, Sentencing and Courts Act 2022. This legislative change recognises the very strong public and Parliamentary feeling about assaults against public-facing workers.

298. Due to lack of evidence, we are not able to provide an estimate for how this policy may impact the number of incidences of violence or abuse towards retail workers or monetise the impact. When evaluating the impact of the policy, we will consider approaches to assess this specific impact, including using the publicly available data mentioned above.

Tourism, immigration, and international investment

Tourism and immigration

299. The smokefree generation policy may make the UK a less attractive place to come for tourists, immigrants, and international students that are smokers. If this did happen, it could have knock-on impacts on various sectors in the economy, such as tourist attractions, hospitality, and higher education.

300. Those currently coming to the UK from outside the UK are allowed to bring an amount of tobacco for personal use without paying tax or duty[228]. This includes up to 200 cigarettes or 250 grams of tobacco. There is no personal allowance for tobacco if you are under 17. The duty free rules are not changing under the smokefree generation policy. We expect tourists to abide by the UK law while they are in the UK.

301. For immigrants coming to the UK, data from ONS shows that the main reasons for EU and non-EU migration to the UK include work, studying, family, and humanitarian reasons[229]. Although it is possible that the actual reason people migrate to the UK is

[226] British Retail Consortium. 2023. Crime Survey: 2023 Report.
[227] Association of Convenience Stores. 2023. The Crime Report 2023.
[228] Bringing goods into the UK for personal use: Arriving in Great Britain (viewed on 26 January 2024).
[229] ONS. 2023. Long-term international migration, provisional: year ending June 2023.

different to the reason they have been granted a visa, we have not identified any evidence to suggest that current smoking laws in this country are a significant driver of immigration. In addition, the tobacco control legislative framework in the UK is already regarded as one of the most comprehensive in the world[230].

302. As we do not have evidence on the impact this policy would have on tourism and immigration, we have not been able to quantify this impact. However, for the reasons explained above, we expect this impact to be minimal.

International investment

303. The smokefree generation policy may also make the UK a less appealing place for business leaders who smoke to invest in. However, we have not identified any evidence to suggest that current smoking laws in this country influence decisions by business leaders to invest in the UK. Key factors affecting whether investors choose to invest in the UK from abroad include the security and stability of the economy and currency, price levels, interest rates, and tax laws[231]. In addition, as mentioned above, the tobacco control legislative framework in the UK is already regarded as one of the most comprehensive in the world.

304. As we do not have evidence on the impact this policy would have on international investment, we have not been able to quantify this impact. However, for the reasons explained above, we expect this impact to be minimal.

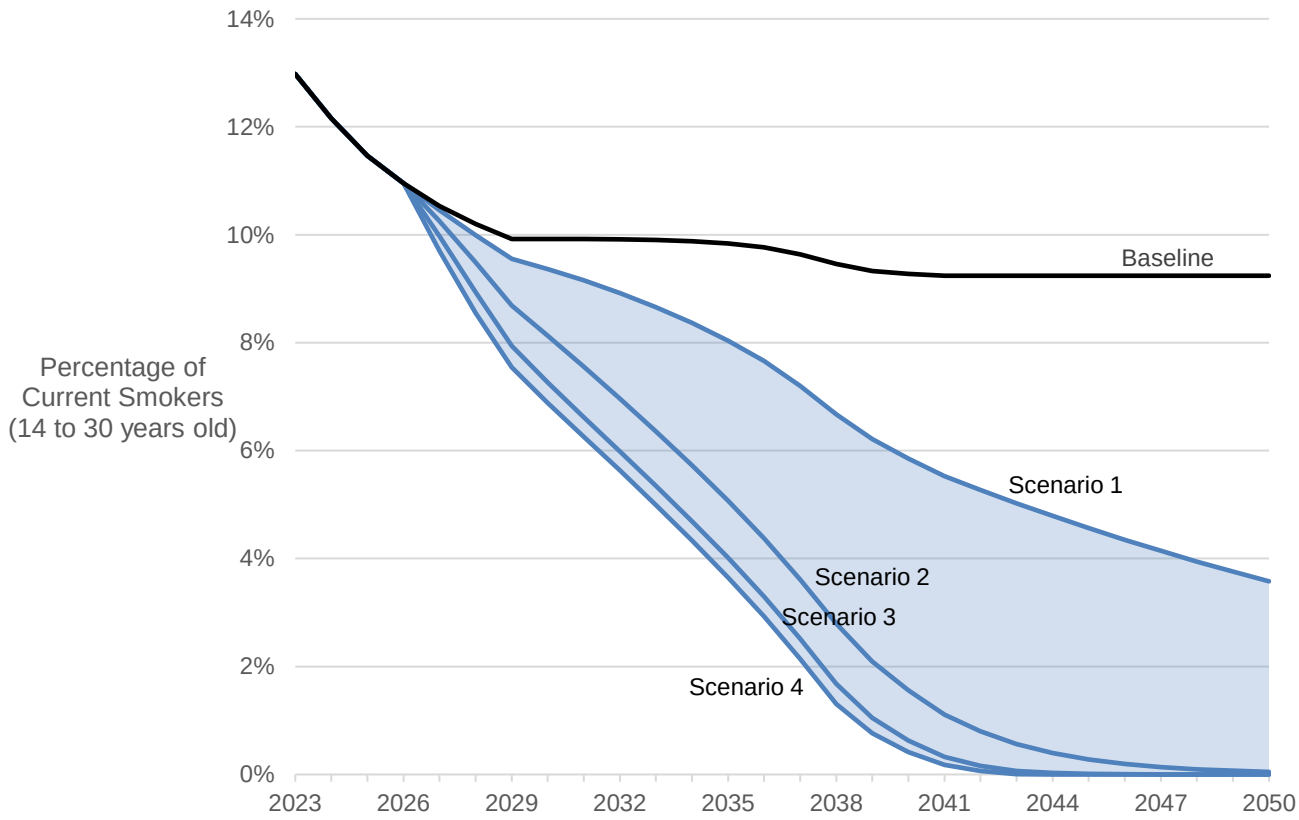
[230] Tobacco Control Scale. 2022. Tobacco Control Scale 2021. (viewed on 26 January 2024).
[231] ONS. 2018. Exploring foreign investment: where does the UK invest, and who invests in the UK?

Sensitivity analysis

Description of scenarios

305. Four scenarios were initially modelled for the smokefree generation policy, looking at a range of different levels of impact (see Figure 12). These are either more or less optimistic than the central scenario (Scenario 2), assuming greater or lesser reductions in instigation rates for those under the age of sale. These have been updated as part of this impact assessment.

Figure 12: Modelled smoking prevalence (14 to 30 years old), command paper scenarios.



Alternative scenarios (including alternative baseline scenario)

306. Two additional scenarios have been explored as part of this impact assessment.

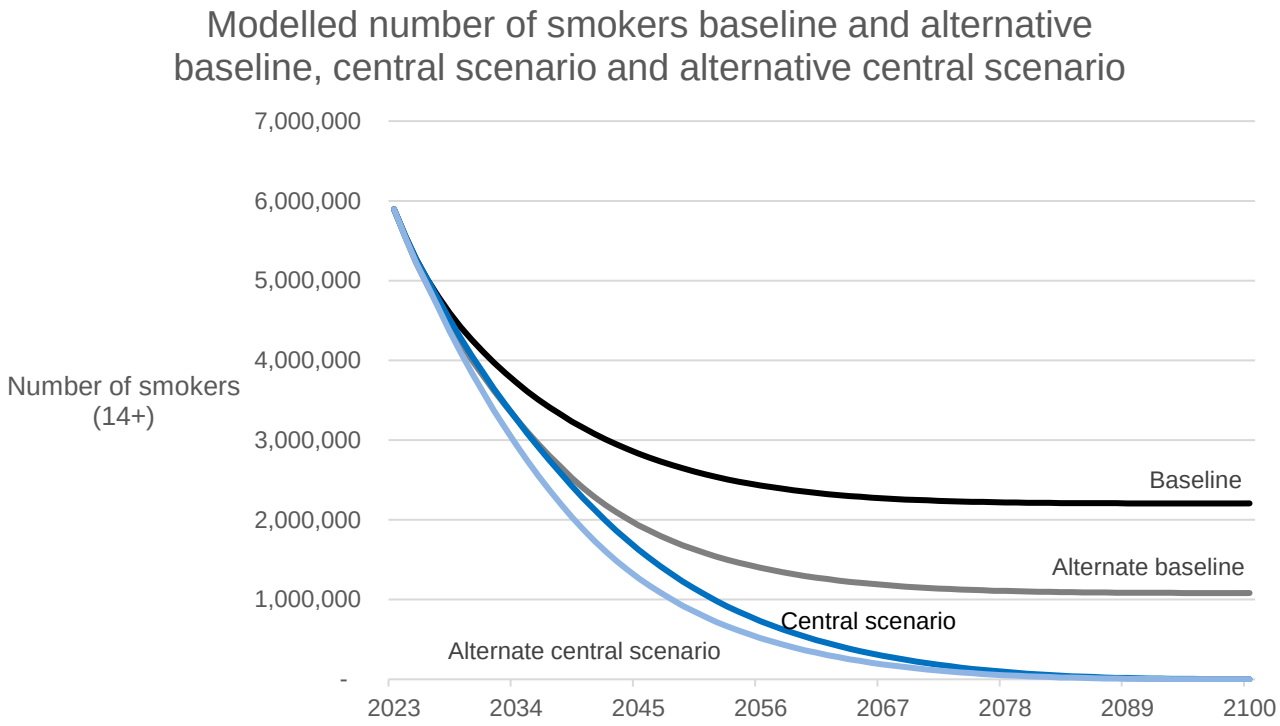
307. Scenario 5 considers a one-off drop in instigation for each age under the new age of sale each year and does not apply a year on year affect as with Scenarios 1 to 4. This one-off drop in instigation rates is modelled as 30% in this scenario (matching the reduction in the central scenario).

308. Scenario 6 assumes the same effect size as the central scenario (a 30% year on year reduction) but is compared against a different baseline. This baseline assumes a continued and projected changing trend in instigation, quit, and relapse rates up to 2040 (developed and provided by the University of Sheffield). It should be noted that the projected changing trend in the instigation, quit, and relapse rates up to 2040 developed by the University of Sheffield assume that there is some continued policy intervention on smoking. As explained above, we have not used this as our central scenario given the

uncertainty about whether these trends in transition probabilities would continue inherently or only as a result of continued policy action on smoking.

309. Figure 13 shows the difference between the two baselines and the modelled central scenario for the number of smokers aged 14 and over between 2023 and 2100.

Figure 13: Scenario 2 (Central scenario) and Scenario 6 (alternative baseline)



310. Table 27 shows the outputs and subsequent costs and benefits associated with each of the different scenarios for England

311. Table 28 shows the costs and benefits associated with each of the different scenarios for the UK.

Table 27: Sensitivity analysis summary for England

Category	Measure, by 2056	Baseline	Scenario 1	**Scenario 2** (Central scenario)	Scenario 3	Scenario 4	Scenario 5	Scenario 6
Smoking metrics	Number of smokers (14+)	2,429,964	1,375,494	730,399	668,514	651,038	1,942,600	517,758
	Prevalence (14 to 30)	9.2%	2.7%	0.0%	0.0%	0.0%	6.7%	0.0%
	Prevalence (18+)	5.1%	3.0%	1.6%	1.5%	1.4%	4.1%	1.2%
Mortality and morbidity	Deaths avoided	-	990	2,579	3,384	3,731	1,042	1,490
	Disease cases avoided	-	4,177	10,886	14,480	16,081	4,519	5,951
Benefits	QALY gains	-	£149m	£405m	£560m	£634m	£179m	£234m
	Productivity gains	-	£10,017m	£20,740m	£23,434m	£24,408m	£6,889m	£14,445m
	Health care	-	£1,329m	£2,752m	£3,110m	£3,239m	£914m	£1,917m
	Social care	-	£796m	£1,649m	£1,863m	£1,941m	£548m	£1,148m
	Fire costs	-	£426m	£868m	£977m	£1,017m	£285m	£505m
Costs	Lost profits – Retailers	-	£942m	£1,932m	£2,189	£2,281m	£634m	£1,064m
	Lost profits – Wholesalers	-	£208m	£427m	£484m	£504m	£140m	£235m
	Lost profits – Manufacturers	-	£286m	£587m	£637m	£665m	£185m	£324m
	Lost duty	-	£10,722m	£21,983m	£24,903m	£25,954m	£7,208m	£12,383m
	Familiarisation – Retailers	-	£7.6m	£7.6m	£7.6m	£7.6m	£7.6m	£7.6m
	Age verification – Retailers	-	£130m	£98m	£90m	£87m	£140m	£98m
	Signage – Retailers	-	£0.2m	£0.2m	£0.2m	£0.2m	£0.2m	£0.2m
	DHSC communications	-	£1.5m	£1.5m	£1.5m	£1.5m	£1.5m	£1.5m
Cost-benefit metrics	NPV		£11,427m	£23,946m	£27,171m	£28,356m	£7,891m	£16,842m

Table 28: Sensitivity analysis summary for the UK

Category	Measure, by 2056	Scenario 1	Scenario 2 (Central scenario)	Scenario 3	Scenario 4	Scenario 5	Scenario 6
Benefits							
	QALY gains	£177m	£480m	£664m	£752m	£212m	£277m
	Productivity gains	£11,876m	£24,588m	£27,782m	£28,937m	£8,167m	£17,125m
	Health care	£1,576m	£3,263m	£3,687m	£3,840m	£1,084m	£2,273m
	Social care	£944m	£1,955m	£2,209m	£2,301m	£650m	£1,361m
	Fire costs	£505m	£1,029m	£1,158m	£1,206m	£338m	£599m
Costs							
	Lost profits – Retailers	£1,117m	£2,290m	£2,595m	£2,704m	£752m	£1,261m
	Lost profits – Wholesalers	£247m	£506m	£574m	£598m	£166m	£279m
	Lost profits – Manufacturers	£339m	£696m	£755m	£788m	£219m	£384m
	Lost duty	£12,711m	£26,062m	£29,524m	£30,770m	£8,545m	£14,861m
	Familiarisation – Retailers	£9m	£9m	£9m	£9m	£9m	£9m
	Age verification – Retailers	£154m	£116m	£107m	£103m	£166m	£116m
	Signage – Retailers	£0.2m	£0.2m	£0.2m	£0.2m	£0.2m	£0.2m
	DHSC communications	£2m	£2m	£2m	£2m	£2m	£2m
Cost-benefit metrics							
	NPV	£13,549m	£28,392m	£32,213m	£33,620m	£9,356m	£19,968m

312. The central estimate suggests that the Net Present Value (NPV) of Option 2 is around £28 billion. We recognise that there are uncertainties that could affect our estimates of each of the costs and benefits.

313. The largest quantified benefit is the productivity gains from the reduced number of smokers as a result of this policy. This is largely based on the ASH estimates for the wider societal costs of smoking in England[232], which at the time of this analysis was the best available estimate. A possible limitation of the ASH estimate is that it does not control for certain factors that may affect a person's earnings. If the ASH estimate is an overestimate of the impact smoking has on productivity in the economy, our estimate of the productivity gains from this policy will also be an overestimate.

314. Despite this, the QALY gains significantly increase over a longer period, and by 2100 are the largest quantified benefit (despite capturing only the effects of mortality, and not the very significant morbidity impact of smoking). By 2100, even if the productivity benefits were removed completely, the policy would still have a positive NPV, of around £74 billion. Therefore, by 2100 there would need to be very large changes in the estimated costs, benefits, or a combination of the two, for the costs to outweigh the benefits.

Specific Impact Tests

315. This impact assessment has considered impacts on a range of stakeholders. Below are a series of specific impact tests undertaken as part of the impact assessment, based on Option 2.

Small and Micro Business Assessment (SaMBA)

316. Based on the scope of the policy, it would not be possible to exempt small businesses from these regulations while still achieving the aims and objectives of the policy. This is because a large proportion of tobacco is still sold in small businesses (retailers and shisha bars), and therefore to exempt them would significantly reduce the reach of the policy – particularly in areas with less access to larger shops (such as rural areas). In addition, this policy will apply to all tobacco products, not just cigarettes and hand rolling tobacco, to ensure that all young people are protected from the harms of tobacco. Therefore, to achieve the aim and objectives of this policy it is also not possible to exempt any tobacco manufacturers that are small businesses, even if they only manufacture specialist products such as pipe tobacco and snuff.

317. Only costs incurred by retailers and shisha bars are quantified for this Small and Micro Business Assessment (SaMBA), as no wholesalers are expected to be operating as small or micro businesses.

318. Although we are aware of a limited number of small and micro tobacco product manufacturers that are based in the UK, who mainly appear to produce a diverse range

[232] Action on Smoking and Health. 2023. £14bn a year up in smoke – economic toll of smoking in England revealed.

of specialist tobacco products, we have not been able to identify sufficient data on these businesses to estimate the loss in profit for these specific businesses as a result of the smokefree generation policy.

319. With reference to the RPC's SaMBA checklist[233], the very limited data we have been able to identify does not enable us to: i) identify the number of businesses in scope of the regulation; ii) the market share of these businesses; iii) what the impact would be in these businesses - not least because we do not have data on what proportion of their sales are oversees to determine what proportion of their sales are unaffected by this policy. For a more detailed discussion of the data that we have been able to identify see 'Manufacturers of tobacco and shareholders' section above.

320. With respect to retailers and shisha bars that are SaMBAs, the IA considers the following impacts:

- Cost to check people's age
- Cost of staff training and awareness
- Cost of putting up new signage
- Lost profits as a result of reduced consumption

321. Data on the number of retailers comes from the Association of Convenience Stores (ACS), who publish annual reports which includes the number of convenience stores in the UK. They also produce an annual Forecourt report, which looks specifically at shops located around petrol stations. In 2023, ACS reports there to be 49,388 convenience stores in mainland UK of which 7,398 were in forecourts[234]. The reports do not provide the number or proportion of these that sell tobacco, however, tobacco and e-cigarettes made up 21.9% of sales, suggesting it is likely the majority do sell tobacco. Of those 49,388, 70% were independent retailers. The other 30% were 'multiples,' defined by the report as '*Retail businesses operating chains of 10 or more convenience stores under a centrally owned fascia.'* For this reason, they are excluded from the SaMBA, and only the costs falling on 70% of the total number of shops is considered. Based on population estimates from ONS[235]. Adjusting the number of convenience stores in the UK by the 70% that would be considered small and micro businesses, this gives an estimated number of small and micro businesses in England of 29,161, and in the UK of 34,572 retailers.

322. That means that the number of convenience stores selling tobacco that are not small and micro retailers is estimated to be 12,498 in England and 14,816 in the UK. Also, based on the estimated number of supermarkets in the UK (5,944[236]) that we assume to sell tobacco, we estimate that there are 5,014 in England and 5,944 in the UK. In

[233] RPC. 2019. Checklist_for_high_quality_SaMBA_NEW_AUGUST_2019.pdf (publishing.service.gov.uk)
[234] Association of Convenience Stores. 2023. Forecourt Report 2023.
[235] ONS. 2022. Population estimates for the UK, England, Wales, Scotland and Northern Ireland.
[236] IGD. 2019. UK Grocery Store Numbers 2018.

summary, the total number of retailers that sell tobacco that are not small and micro retailers is estimated to be 17,511 in England and 20,760 in the UK.

Cost to check people's age

323. The additional cost to retailers of having to check more people's age for sales of tobacco are detailed in Option 2[237]. However, this applies to all retailers – here, the specific impact on small and micro businesses is considered.

324. Evidence from the Standardised Packaging of Tobacco impact assessment[238] suggests around 46% of tobacco sales are through smaller retailers[239]. Furthermore, only 70% of the convenience stores would be considered Small and Micro, based on the ACS Local Shop Report. Applying these percentages to the overall costs of additional ID checks to retailers in England suggests that small and micro businesses in England would incur costs of roughly £31.7 million over 30 years, borne by all small and micro retailers. Applying these percentages to the overall costs of additional ID checks to retailers in the UK suggests that small and micro businesses in the UK would incur costs of roughly £37.6 million over 30 years, borne by all small and micro retailers.

325. Given the large, estimated number of small and micro retailers (34,752 in the UK), the cost to any one retailer is likely to be small and spread over 30 years (around £1,088 on average).

Cost of staff training and awareness

326. The additional cost to retailers of having to familiarise themselves with the new legislation and guidance, and disseminate this information to their staff, is detailed in Option 2[240]. However, this applies to all retailers – here, the specific impact on small and micro businesses is considered.

327. There are an estimated 41,659 convenience stores in England, with one store manager for each. These store managers would have to disseminate this information to 299,957 members of staff. Of those, 70% would be considered small and micro businesses based on the ACS Local Shop Report 2023. Multiplying these estimates by the estimated time it would take them to read and disseminate the guidance[241], and the estimated hourly wage for shop managers and 'Retail cashiers and check-out operators,' gives an estimated cost of around £1.9 million. The estimated cost to small and micro businesses across the UK would be £2.3 million. As this cost would be borne by 29,161 convenience stores in England, and 34,572 in the UK, the cost to any one small or micro business is likely to be small (around £66 on average).

[237] See paragraphs 205 to 212.
[238] Department of Health. 2015. Standardised packaging of tobacco products impact assessment: Specific Impact Tests.
[239] Euromonitor International. 2011. Cigarettes in the United Kingdom.
[240] See paragraphs 215 to 225.
[241] 1 hour 6 minutes for shop managers to read the guidance and 30 minutes for them to disseminate it to members of staff in shops.

Cost of putting up new signage

328. The cost to retailers of having to put up new signage is detailed in Option 2[242]. Here, the specific impact on Small and Micro Businesses is considered.

329. There are an estimated 41,659 convenience stores in England and 49,388 in the UK. Of those, 70% would be considered small and micro businesses according to the ACS Local Shop Report 2023. Assuming that the cost of a new sign is the same for all retailers, assumed to be around £4, we would expect small and micro retailers to incur a one-off cost of around £123,000 in England and £146,000 in the UK. The estimated cost to any one retailer is £4.

Lost profits

330. Lost profits as a result of reduced consumption are detailed above in Option 2[243]. However, this applies to all retailers. Here, the specific impact on Small and Micro Businesses is considered.

331. Evidence from the Standardised Packaging of Tobacco impact assessment[244] suggests around 46% of tobacco sales are through smaller retailers[245]. Further, 70% of these would be considered small and micro businesses according to the ACS Local Shop Report 2023. Applying these percentages (46% and then 70%) to the overall loss in profits (£1,932 million in England, £2,291 million in the UK) to retailers suggests that small and micro businesses would see a loss of roughly £622 million across 30 years, borne by all small and micro retailers in England, and £738 million for the UK. As explained above, there are an estimated 29,161 small and micro business retailers in England, and 34,572 in the UK, and therefore the cost to any one retailer would be spread over 30 years (around £21,400 on average).

332. Small and micro retailers may also incur lost income from reduced footfall-related sales. These are sales of non-tobacco goods bought in addition to tobacco. A 2016 report by ASH[246] 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. The analysis compared the average values of the different types of transaction and concluded that were 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*." This evidence 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.

[242] See paragraphs 226 to 226.
[243] See paragraphs 228 to 235.
[244] Department of Health. 2015. Standardised packaging of tobacco products impact assessment: Specific Impact Tests.
[245] Euromonitor International. 2011. Cigarettes in the United Kingdom.
[246] Action on Smoking and Health. 2016. Counter Arguments – How important is tobacco to small retailers?

333. It may even be the case that small and micro retailers experience an increase in profits from less expenditure on tobacco, as consumers who previously spent money on tobacco now spend money on other products. Profit margins vary by product, but as an example:

334. An alternative that some smokers may move to as a result of quitting smoking is vaping. The Nicotine Inhaling Products impact assessment[247] assumed a profit margin of 10% for these products, therefore money spent on vapes could double the profits associated with that money spent for retailers that sell both tobacco and vapes.

335. However, we have not been able to quantify the net impact for small and micro retailers of a change in products purchased.

Shisha bars

336. It is assumed that all shisha bars are either small or micro businesses. Therefore, the estimated costs to these businesses in Option 2 also reflect the estimated costs to small and micro shisha bars.

- Cost to check people's age: non-monetised
- Cost of staff training and awareness: £46,000 in England; £54,000 in the UK
- Cost of putting up new signage: £1,800 in England; £2,200 in the UK
- Lost profits: non-monetised

Health and longevity impacts

337. Health and longevity impacts are discussed in detail above in Option 2.

Equalities assessment

338. This is a wide-ranging public health measure, aimed at preventing ill health among the population by reducing the number of people that take up smoking.

339. Smoking prevalence is higher in more deprived areas, and so these communities may see a bigger positive impact and reduction of health inequalities caused by tobacco use.

340. This is also the case among certain groups, such as those with mental health conditions, and those in routine and manual occupations. People with poor mental health die on average 10 to 20 years earlier than the general population, and smoking is the biggest cause of this life expectancy gap. As a result, we would expect that the reductions in smoking prevalence delivered by this policy to improve people's mental health, compared to if they had started smoking in the absence of this policy.

[247] Department of Health. 2015. Nicotine Inhaling Products (Age of Sale and Proxy Purchasing) Regulations 2015.

341. In relation to sex and sexual orientation, smoking rates are higher among men rather than women, and are higher among gay, lesbian, and bisexual people. Therefore, the policy may have a more positive impact on the health of men as opposed to women, and may also be more beneficial to gay, lesbian, and bisexual people than heterosexual people.

342. Smoking prevalence is higher amongst white and mixed communities in England. Also, it is understood that use of tobacco is not limited to just cigarettes and hand rolling tobacco, and that more niche tobacco (such as waterpipe and chewing tobacco) may also be more prevalent in some demographic groups. As this policy will apply to all tobacco products, not just cigarettes and hand rolling tobacco, it will ensure that all young people are protected from the harms of smoking, including those that use products with cultural ties such as shisha.

343. In England and the UK, smoking prevalence is higher among those who are younger (25 to 34 year olds) compared to those who are older (over 65). This policy will only target those born on or after 1 January 2009, and so will only impact current younger teenagers. The restriction will stay with them throughout the course of their life, and so the positive impact of the policy will later be seen by older age ranges.

344. This policy will not have a direct impact on existing smokers. As a result, this policy is not expected to directly impact adults already living with these characteristics, or in more deprived areas. However, it is likely to ensure that future generations in these groups will have lower smoking rates and therefore improved health outcomes.

345. Overall, we do not assess this policy to have a negative impact on any protected characteristic or other groups assessed.

346. This policy proposal is compliant with age discrimination legislation (Equality Act 2010 and ECHR Article 14) as there is an objective and reasonable justification behind it – the reduction of harm from smoking to public health, which data and consultation back up.

347. A more detailed Equalities Impact Assessment will be completed in due course, which will analyse the impact of the Bill on each of the protected characteristics and considers the impact on the aims of the Public Sector Equality Duty.

Rural proofing

348. There is no evidence to suggest that the smokefree generation policy will have a significant impact on people living in rural areas. As smoking prevalence is higher in more deprived areas, it may have more of a positive impact on health in deprived rural areas, but also more of an impact on retailers.

Competition assessment

349. As all retailers will have to adhere to the same legal age of sale for purchasing tobacco, this policy does not directly affect the number or range of suppliers. The policy also does not indirectly limit the number or range of suppliers, nor does the policy limit the ability of suppliers to compete. The policy also does not reduce suppliers' incentives to compete vigorously.

350. The impact on retailers could vary between different size businesses, for example, if small and micro businesses faced larger profit losses than larger businesses. However, as explained above, we have limited evidence on the profit margins of retailers for tobacco products, and the evidence we do have does not provide a breakdown of the profit margins for different size businesses.

Environmental impact

351. The overall cost of tobacco litter to local authorities has been discussed above in the assessment of option 2. While we expect the policy will have a positive impact on the environment, we have not currently been able to quantify the overall cost of any changes in tobacco litter. An environmental impact assessment will be conducted in due course.

Human rights

352. We consider the proposal to legislate to create a smokefree generation to be compatible with the European Convention on Human Rights.

Justice

353. A full justice impact assessment will be conducted in due course.

Vaping policies

354. This section provides an assessment of the costs and benefits of measures in the Bill to take regulation making powers to:

- Restrict the flavours of nicotine and non-nicotine vapes
- Regulate the packaging and product presentation of nicotine and non-nicotine vapes
- Regulate the point of sale displays of nicotine and non-nicotine vapes

355. While the above restrictions and regulations will also apply to other nicotine products, such as nicotine pouches, the scope of this impact assessment is nicotine and non-nicotine vapes only, and the analysis does not account for other nicotine products at this stage.

356. The detail of how the powers created by the Bill will be used will be outlined at a later date. Therefore, this section only provides indicative estimates for some of the costs and benefits and does not provide a Net Present Value (NPV) and Equivalent Annual Net Cost to Business (EANDCB) for these policies. Using RPC guidance, our assessment of these policies is in Scenario 2[248]. Impact assessments (including NPV and EANDCB assessments) will be developed in advance of secondary legislation being brought forward to implement policy changes using these powers. The impact assessments at that stage will also consider the impact of the regulations on other nicotine products, such as nicotine pouches.

357. As described above, these powers in the Bill will apply to the whole of the UK.

358. For each cost and benefit we have provided an indicative estimate for England and the UK. As we have not identified data to calculate indicative estimates for the UK for every cost and benefit, the UK estimates are the England estimates adjusted based on the relative size of the population in England compared to the whole of the United Kingdom. Based on population estimates from ONS[249], England accounts for around 84% of the population of UK. Therefore, all the England estimates have been uplifted by 1.19[250] to provide estimates for the costs and benefits of the vaping policies for the UK.

359. Although we do not currently know exactly when any of these policies will come into force, for the purposes of this assessment we have assumed that they will be applied from 2025. Therefore, all current prices in our analysis have been adjusted to 2025 prices using HMT GDP deflators[251].

[248] Regulatory Policy Committee. 2019. RPC case histories: assessment and scoring of primary legislation measures.
[249] ONS. 2022. Population estimates for the UK, England, Wales, Scotland and Northern Ireland.
[250] Calculated by dividing the population of the UK by the population of England.
[251] HMT. 2014. GDP deflators at market prices, and money GDP.

Background and overview

360. Vapes (e-cigarettes) are devices that simulate smoking, by allowing you to inhale vapour rather than smoke. They work by heating a liquid that typically contains nicotine, propylene glycol and/or vegetable glycerine, and flavourings[252]. Non-nicotine vapes often contain the same substances, apart from nicotine. In this document 'vapes' refers to both nicotine and non-nicotine devices and the substances to be vaped.

Vapes as a smoking cessation tool

361. The latest evidence has found that, in the short and medium term, vaping poses a small fraction of the risks of smoking[253], because vapes do not contain tobacco.

362. Vaping can therefore provide a less harmful alternative for an adult smoker, by giving the person the nicotine they crave through heating e-liquid but creating fewer toxins and at lower levels.

363. Recent evidence shows that, for many adult smokers, vapes can be an effective tool in supporting smoking cessation, especially when combined with expert support[254, 255]. It found that adverse events from vapes are rare, and as rare as adverse events from nicotine replacement therapies[256]. Ensuring vapes continue to be made available to current smokers can be helpful in reducing smoking rates.

Health risks associated with youth vaping

364. However, vapes are not risk free and should only be used to help people quit smoking and remaining abstinent, they should not be used by non-smokers and under no circumstances by children.

365. The main ingredient of vapes that poses a health risk to young people is nicotine. When inhaled, nicotine is a highly addictive drug. The addictive nature of nicotine means that a user can become dependent on vapes when they use them regularly.

366. Giving up nicotine can be very difficult because the body has to get used to functioning without it. Withdrawal symptoms can include cravings, irritability, anxiety, trouble concentrating, headaches, and other mental and physical symptoms.

367. 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 compounds if they are overheated[257]. The long-term health harms of colours and flavours when inhaled are unknown, but they are very unlikely to be beneficial.

[252] NHS. Using e-cigarettes to stop smoking (viewed on 26 January 2024)
[253] OHID. 2022. Nicotine vaping in England: 2022 evidence update.
[254] Boyce and others. 2022. Electronic cigarettes for smoking cessation.
[255] Lindson and others. 2023. Pharmacological and electronic cigarette interventions for smoking cessation in adults: component network meta-analyses.
[256] Beard and others. 2019. Association of prevalence of electronic cigarette use with smoking cessation and cigarette consumption in England: a time–series analysis between 2006 and 2017.
[257] Komura and others. 2022. Propylene glycol, a component of electronic cigarette liquid, damages epithelial cells in human small airways.

368. There is uncertainty about the scale and nature of long-term vaping harms. Not all the risks from vapes have been fully investigated, including inhaling additives for flavours, and the long-term effects of vaping are yet unknown, although further evidence will likely emerge in the future.

Number of young people that vape

369. It is illegal to sell vapes to people aged under 18. However, the number of young people that have vaped has increased significantly in recent years.

370. NHS Digital's report, Smoking, drinking and drug use among young people in England 2021[258], showed a recent doubling of regular vape use for 11 to 15 year olds, from 2% in 2018 to 4% in 2021. This is equivalent to around 140,000 children in England aged 11 to 15 years old regularly vaping. The report also shows that vaping prevalence is higher among older children, where 1% of 11 year olds were current vape users, compared with 18% of 15 year olds[259].

371. More recent analysis by ASH also shows the number of young people who have tried vaping has increased. The ASH Use of e-cigarettes (vapes) among young people in Great Britain report showed that in 2023, 20.5% of children (aged between 11 and 17) had tried vaping, up from 15.8% in 2022, and 13.9% in 2020 before the first COVID-19 lockdown[260].

Environmental impact of vapes

372. This rise in youth vaping in recent years has happened concurrently with the increase in the use of disposable vape products. For example, in 2023, among young people that vape in Great Britain, 69% said the most frequently used device was a disposable (single use) vape, up from 52% in 2022 and 7.7% in 2021[261]. However, it should be noted that this data is from a cross sectional survey and does not demonstrate that the increase in youth vaping has been driven by the increase in the availability and use of disposable vapes.

373. The rise in the use of disposable vapes has inevitably led to a rapid increase in the volume of these products becoming waste. When littered, disposable vapes introduce plastic, nicotine salts, heavy metals, lead, mercury, and flammable lithium-ion batteries into the natural environment. This contaminates waterways and soil, posing a risk to the environment and animal health. Disposable vapes also pose a fire risk when not separately collected for specialist recycling, as lithium-ion batteries can ignite when crushed in a refuse vehicle or at waste-processing plants.

374. Research on vape disposal by YouGov, commissioned by Material Focus[262], found that almost 5 million disposable vapes are either littered or thrown away in general waste

[258] NHS Digital. 2022. Smoking, Drinking and Drug Use among Young People in England, 2021.
[259] Regular users were those who used vapes at least once a week. Current use includes regular users and occasional users who used vapes less than once a week.
[260] Action on Smoking and Health. 2023. Use of e-cigarettes (vapes) among young people in Great Britain.
[261] Action on Smoking and Health. 2023. Use of e-cigarettes (vapes) among young people in Great Britain.
[262] Material Focus. 2023. Number of disposable single-use vapes thrown away have in a year quadrupled to 5 million per week.

every week. This has quadrupled in the last year and is equivalent to the lithium batteries that could power 5,000 electric vehicles being thrown away per year. The report found 52% of 18 to 34 year olds who bought a vape in the last year bought a single-use product. The report also found that over 360 million single use vapes are bought in the UK each year, and concerningly, only 73% of these vapes are thrown away.

375. Regulating vape flavours, packaging, and presentation, as well as point of sale displays, is expected to reduce the number of people taking up vaping, and therefore it is expected that there will be environmental benefits from reduced litter from vaping products. The UK Government is also considering restricting the supply and sale of disposable vapes in England using powers under section 140 of the Environmental Protection Act 1990.

Rationale for government intervention

376. A range of measures are already in place which are intended to deter and restrict children and non-smokers from vaping.

377. As explained above it is already illegal to sell vapes to people aged under 18. In April, a new enforcement unit led by Trading Standards was set up for an initial two year period to tackle underage sales and illicit vapes[263]. In addition, new funding of £30 million per year, announced alongside the legislative proposals covered by this impact assessment, will help strengthen tobacco and vaping enforcement work over the next five years[264]. The allocation of funding for country-specific services in Scotland, Wales, and Northern Ireland, such as for local authority trading standards services, is the responsibility of relevant ministers in those countries.

378. Also, under the Tobacco and Related Products Regulations 2016 (TRPR)[265], vape packaging already must contain a message that states that 'This product contains nicotine which is a highly addictive substance'.

379. In October 2022, new content was published on the risks of vaping for young people on the FRANK[266] and Better Health[267] websites, and DHSC provided input to educational resources produced by partners including the PSHE Association. A new resource pack for schools on vaping, intended for children aged 11 to 13, was available for schools for 2023/34 academic year[268].

380. Despite the measures already in place, the data described above shows that youth vaping prevalence continues to increase. Therefore, further government intervention is required to tackle youth vaping and reduce the associated health risks.

[263] DHSC and Neil O'Brien MP. 2023. Crackdown on illegal sale of vapes.
[264] DHSC. 2023. Stopping the start: our new plan to create a smokefree generation.
[265] The Tobacco and Related Products Regulations 2016 (legislation.gov.uk)
[266] FRANK. Vapes. (viewed on 26 January 2024)
[267] NHS. Vaping to quit smoking. (viewed on 26 January 2024)
[268] PHE. Vaping – KS3 form time activities. (viewed on 26 January 2024)

381. The Youth vaping: call for evidence[269] launched in April looked to identify opportunities to reduce the number of children accessing and using vaping products. It explored the following issues: (i) regulatory compliance, (ii) the appearance and characteristics of vapes, (iii) the marketing and promotion of vapes, (iv) the role of social media, (v) the environmental impact of vapes, and (vi) the vaping market.

382. Through the call for evidence, we heard that vape use among children is increasing, and that vapes are appealing to children and are being marketed and promoted to them. Respondents were concerned about the use of disposable vapes and stated that children find the vape packaging and the products themselves attractive, including the diverse range of available flavours and colours. This was supported by the evidence submitted by respondents.

383. Evidence shows that vaping products are regularly promoted in a way that appeals to children, through flavours and descriptions, in-store marketing of cheap and convenient products. This marketing of vapes encourages children then to vape, which may lead them to become addicted to nicotine when they may not be fully aware of the associated harms of nicotine, and before they are able to make informed, adult decisions.

384. The consultation that was launched in October 2023 asked questions about policies which have the potential to reduce the appeal, availability, and affordability of vaping to children. The Bill will provide powers to introduce restrictions on vaping in Regulations. Further impact assessments will be developed for any secondary legislation that is implemented using powers created by the Bill.

385. The government will intervene to limit the extent to which vapes are promoted to children, including:

- Regulate vaping and nicotine product contents and flavours (referred to as ‘Restricting vape flavours’ in this impact assessment)

- Regulate vaping and nicotine product retail packaging and product requirements (referred to as ‘Regulating nicotine and non-nicotine vape packaging and product presentation' in this impact assessment) ; and

- Regulate displays of vaping and nicotine products (referred to as ‘Regulating point of sale displays for nicotine and non-nicotine vapes' in this impact assessment)

386. The following sections of this chapter provides details of these proposed policies and initial analysis of the costs and benefits for vapes (both nicotine and non-nicotine), but not other nicotine products which will also see the same restrictions and regulations as a result of the bill. The decision to extend these provisions to cover other nicotine products is because of the fact that they contain nicotine and thus should be subject to similar regulatory restrictions as nicotine vapes to protect children’s health. There is a

[269] OHID. 2023. Youth vaping: call for evidence.

growing use of these products amongst younger people, and the government wants to ensure that regulations are future-proof so that nicotine products cannot become as enticing to children as vapes are now. The consultation also highlighted the importance of regulating nicotine products under a single regulatory framework to ease enforcement and reduce the likelihood of loopholes.

Restricting vape flavours

Rationale for intervention

387. TRPR currently restricts certain ingredients including colourings, caffeine, and taurine. However, it does not restrict any combinations of flavours or flavour types.

388. There is a vast and diverse variety of flavours on the UK market including: tobacco (imitating cigarettes), menthol and mint, fruit flavours (such as strawberry, blueberry and mango), dessert and sweet flavours (such as bubblegum, cotton candy, caramel, or cheesecake), tobacco blends (combining tobacco with vanilla, caramel, or nuts), and custom mixes (vape liquid mixed by users to suit their personal preferences). The attractive wording ('descriptor names') can also attract children to try vaping, such as 'fiery flavoured strawberry' and 'berry blast': sweet flavours that children may be familiar with.

389. In the UK, a 2023 survey by ASH shows that the most frequently used vape flavouring for children is 'fruit flavour,' with 60% of current children using them[270], While 17% of children who vape choose sweet flavours such as chocolate or candy, and 4.8% choose to vape energy or soft drink flavours. The use of flavoured vapes in adult smokers has also increased. In 2015, most adults who vaped used tobacco flavour[271]. However, in recent years there has been a shift, and in 2023 more adults are choosing fruit flavours (47%), as well as mint and menthol (17%), than tobacco (12%).

390. The ASH Use of e-cigarettes (vapes) among young people in Great Britain survey 2023 also indicates that flavours may be an important motivator. The survey shows that among 11 to 17 year olds that have tried vaping but never smoked, 12% said liking the flavours of vapes best described why they use or used a vape. This was the third most popular reason why 11 to 17 year olds that had never smoked said they use or used a vape, behind 'other people using them, so I join in' (18%) and 'just to give it a try' (54%).

391. Multiple systematic reviews have found that the majority of young people are more likely to initiate vaping through flavoured vapes [272, 273, 274], and the use of vapes with flavours not traditionally found in tobacco products, such as fruit and coffee, is higher among

[270] Action on Smoking and Health. 2023. Use of e-cigarettes among young people in Great Britain.
[271] Action on Smoking and Health. 2023. Use of e-cigarettes (vapes) among adults in Great Britain.
[272] Zare and others. 2018. A systematic review of consumer preference for e-cigarette attributes: Flavor, nicotine strength, and type.
[273] Meernik and others. 2019. Impact of non-menthol flavours in e-cigarettes on perceptions and use: an updated systematic review.
[274] Notley and others. 2022. Youth use of e-liquid flavours—a systematic review exploring patterns of use of e-liquid flavours and associations with continued vaping, tobacco smoking uptake or cessation.

youth and young adults (vs. older adults) [275], Highlighting that restricting flavours in vapes may reduce vaping prevalence among youth by preventing initiation.

392. Flavourings may also encourage daily use of vapes. Among smokers not intending to quit[276], daily use is strongly associated with subsequent smoking cessation, but among young people, daily use may be associated with a greater risk of subsequent dependence[277].

393. This evidence demonstrates that vape flavours influence children's decision to vape, and therefore restricting vape flavours is likely to reduce the attractiveness of vapes to children, and in turn contribute to reducing youth vaping rates. However, based on the data from the ASH Use of e-cigarettes (vapes) among young people in Great Britain survey 2023, we recognise that flavours are not the only reason why young people vape. Factors such as peer pressure and curiosity to try them means some young people will continue to vape, irrespective of any restrictions on vape flavours.

Description of options considered

394. The Bill provides powers to regulate vaping and nicotine product contents and flavours.

395. In the consultation, respondents were asked whether they agree or disagree that the UK Government and devolved administration should restrict vape flavours. 47.0% of those who responded to this question agreed with restricting vape flavours, 51.0% disagreed, and 2.0% said they didn't know.

396. The government has consulted[278] on options that could be implemented using the powers conferred by the Bill. Respondents could select more than one answer. the options are:

Option 1: Do nothing

397. This option would mean there would continue to be no restriction on combinations of flavours or flavour types for vapes.

Option 2: Limiting how the vape is described

398. Vape flavours can be restricted by the way they are described. For example, New Zealand has done this by mandating vape flavour descriptions, in their Smokefree Environments and Regulated Products Amendment Regulations 2023[279], to a specified list that includes generic flavour names such as 'tobacco' or 'berry'. This means that vapes could be called 'blueberry,' but not 'blueberry muffin' for example. 30.7% of consultation respondents who answered this question selected this option.

[275] Goldenson and others. 2019. A Review of the Use and Appeal of Flavored Electronic Cigarettes.
[276] Kasza and others. 2022. Associations between nicotine vaping uptake and cigarette smoking cessation vary by smokers' plans to quit: longitudinal findings from the International Tobacco Control Four Country Smoking and Vaping Surveys.
[277] Gravely and others. 2022. Differences in cigarette smoking quit attempts and cessation between adults who did and did not take up nicotine vaping: Findings from the ITC four country smoking and vaping surveys.
[278] DHSC. 2023. Creating a smokefree generation and tackling youth vaping.
[279] New Zealand Legislation, Parliamentary Counsel Office. 2023. Smokefree Environments and Regulated Products Amendment Regulations 2023 (SL 2023/201).

Option 3: Limiting the ingredients in vapes

399. Vape flavours can be restricted by only permitting certain ingredients to be used in the product. In the Netherlands, for example, there is a specified list of ingredients[280] that can be used in vapes, which are those that produce a 'tobacco' taste and pose almost no health harm. 3.4% of respondents who answered this question selected this option.

Option 4: Limiting the characterising flavours (the taste and smell) of vapes

400. The characterising flavours of vapes (the way a vape smells or tastes to a consumer) can be restricted. In 2020, when menthol flavoured cigarettes were banned in the UK, they were restricted based on the 'characterising flavour' of menthol. Finland, for example, has restricted all characterising flavours[281] for vapes, apart from the flavour of tobacco. 10.2% of respondents who answered the question selected this option.

401. For this question, respondents could select more than one answer. This resulted in 23.1% of respondents selecting all three options (options 1,2 and 3) and 19.4% respondents stated that they did not know. Further questions were asked on flavour limitations and alternative flavour options. Impact assessments on the proposal related to vaping in the secondary legislation will be published at a later date.

Indicative estimates for the costs and benefits of restricting vape flavours

402. This section sets out the expected costs and benefits of restricting vape flavours, and where possible provides indicative estimates. As explained above, ahead of the government introducing secondary legislation to restrict vape flavours, a further impact assessment of the specific options would be completed and we would seek to improve our estimates, quantify more of the costs and benefits, and provide a NPV and EANDCB for the policy.

Potential impact

403. We estimate that the potential impact of restricting vape flavours would be a reduction in the number of people taking up vaping and a reduction in the number of people vaping.

404. Using ASH data on the use of vapes among adults and young people[282, 283], we can estimate the proportion of people that vape that are likely to be affected by restrictions of certain flavours.

405. Restricting the flavour of e-liquids to tobacco only would affect a large proportion of people that vape. Among children, just 4.6% of children that vape most frequently choose tobacco flavoured or tobacco menthol flavoured liquids. A further 1.4% reported not using a flavour at all. This means that over 94% of children who vape could be affected in some way by this option.

406. However, restricting vape flavours would also mean 87% of adults that vape could be affected in some way by this option. A decision aid tool published by Bristol University

[280] Netherlands Food and Consumer Product Safety Authority. Ban on flavoured vapes. (viewed on 26 January 2024).
[281] WHO FCTC. Finland: strengthened regulation on packaging, flavours and outdoor smoking.
[282] Action on Smoking and Health. 2023. Use of e-cigarettes among young people in Great Britain.
[283] Action on Smoking and Health. 2023. Use of e-cigarettes (vapes) among adults in Great Britain.

considered the impact of removing all flavours on non-smoking young people and adult smokers using vapes as a quit aid[284]. The study concluded that the flavour ban policies may have a negative impact on adult smoking. The study found that as a result of the flavour ban more adults may go back to smoking tobacco cigarettes. This is in line with recent evidence[285] on the flavour bans that have been imposed in the US, which suggests that for every 0.7mL vape pod that is not sold due to the flavour bans, there is a trade-off of an increase in the sale of 15 additional cigarettes. As mentioned, when describing the options consulted on for restricting vape flavours, several other countries have also introduced similar restrictions on vape flavours. In Finland, evidence shows that flavoured vapes were still used after the prohibition of all vapes that were not unflavoured, or tobacco flavoured[286]. This study suggested that enforcing the flavour ban in Finland may have faced some obstacles, particularly around preventing cross-border and online purchases of flavoured vapes.

407. There is no available evidence on the impact of vape flavour restrictions in New Zealand or the Netherlands. The restrictions on the descriptions of vape flavours in New Zealand were only announced in 2023 and have not been implemented. While limiting of the ingredients in vapes in the Netherlands only came into force in July 2023.

408. In Canada, the government is currently proposing a federal restriction of vape flavours to just menthol mint and tobacco. Several provinces in Canada have already restricted vape flavours, including in Nova Scotia, where only tobacco flavoured vapes are now available. In analysis by the government in Canada, federal restrictions on vape flavours were estimated to reduce consumer demand for vaping products from 10% to 14.3%[287]. The upper estimate of a reduction in demand of 14.3% was based on data from Nova Scotia. In Canada's modelling they used the mid-point of this range of 12.15% to estimate the impact of restricting flavours. To provide indicative estimates for some of the costs and benefits described below, we have used this reduction demand as our assumption for the impact restricting flavours would have in England.

409. We recognise that there are likely to be differences between the Canadian and English vape markets that will mean this estimate will not reflect the actual impact we would see on demand for vapes in England if vape flavours were restricted. The exact impact would also depend on the range of flavours that are restricted. We would expect that the more flavours that are restricted, the larger the impact would be on consumer demand and the reduction in the uptake of vaping among young people.

Health benefits through reduced uptake of vaping among young people

410. As described above, there are health risks associated with young people vaping, mainly due to the presence of nicotine in vapes. However, vaping is estimated to be far less harmful that smoking.

[284] Gibson and others. 2023. A decision aid for policymakers to estimate the impact of e-cigarette flavour restrictions on population smoking and e-cigarette use prevalence among youth versus smoking prevalence among adults.
[285] Friedman and others. 2023. E-cigarette Flavor Restrictions' Effects on Tobacco Product Sales.
[286] Ruokolainen and others. 2022. Correlates of e-cigarette use before and after comprehensive regulatory changes and e-liquid flavour ban among general population.
[287] Canada Gazette, Part 1, Volume 155, Number 25: Order Amending Schedules 2 and 3 to the Tobacco and Vaping Products Act (Flavours)

411. The potential impact section illustrated that restricting vape flavours is expected to reduce the appeal of vapes to children and therefore reduce the number of young people that vape. As a result, restricting vape flavours is expected to provide health benefits through reduced uptake of vaping among young people.

412. In the Government of Canada regulatory impact analysis statement for the Tobacco and Vaping Products Act[288] 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 academics in tobacco control.

413. In the Standardised Packaging for tobacco products impact assessment[289] it was estimated the discounted number of life years saved for each young person who does not take up smoking is 1.0. Based on this estimate and the evidence from Canada, we could estimate the number of life years gained for each young person that does not take up vaping to be 0.2. HMT's The Green Book[290] places a value of £70,000 on a QALY. In the impact assessment for Mandating quit information messages inside tobacco packs[291], we explained that it remains appropriate to use the same value of a QALY for life years where QALY estimates are not readily available. Based on the evidence from Canada, for every young person not taking up vaping, the benefits could be £14,000.

414. However, there is still limited evidence on the health impacts of vaping, particularly the long-term harms of vaping and uncertainty on the number of young people that wouldn't take up vaping as a result of restricting vape flavours. As a result, it has not been possible at this stage to quantify the health benefits of the reduction in the number of young people vaping because of this policy.

Health impacts of fewer people using vapes to quit smoking

415. The potential impact section showed that adults that vape would be affected by a restriction of vape flavours. This would include a proportion of adults that use vapes as a smoking quit aid.

416. According to ONS data on adult vaping prevalence[292], 26.5% of adults that currently vape are also current smokers, and 16.3% are ex-smokers. Data from ASH[293] on adult vaping in Great Britain shows that among current smokers 17% say the main reason they vape is to help them stop smoking completely, and among ex-smokers 22% say it is an aid to help keep them off tobacco.

417. The decision aid tool published by Bristol University mentioned above estimated that 4% of smokers quit because of vapes, and 33% of smokers stated that they would not quit and/or smoke more if flavours were not available. For ex-smokers, it was estimated

[288] Canada Gazette, Part 1, Volume 155, Number 25: Order Amending Schedules 2 and 3 to the Tobacco and Vaping Products Act (Flavours)
[289] DHSC. 2015. The Standardised Packaging of Tobacco Products Regulations 2015 (legislation.gov.uk)
[290] HMT. 2022. The Green Book: appraisal and evaluation in central government.
[291] DHSC. 2023. Tobacco pack inserts impact assessment.
[292] ONS. 2023. Adult smoking habits in the UK: 2022.
[293] Action on Smoking and Health. 2023. Use of e-cigarettes among adults in Great Britain.

that 13% of ex-smokers vape and 13% of these ex-smokers would relapse if flavours were not available.

418. This is just an illustration of the potential impact this policy could have and is likely to be the upper limit on the proportion of smokers that would not quit, and ex-smokers that would relapse, if vape flavours were restricted. Firstly, the Bristol University decision aid tool is based on a scenario where only three vape flavours remain on the market (unflavoured, tobacco, and menthol). The impact on smokers quitting and ex-smokers relapsing would be lower if fewer flavours were restricted. Secondly, there are other quit aids that smokers could try, such as other nicotine replacement therapies. In addition, the Prime Minister's' announcements on smoking and vaping on 4 October 2023 included additional investment to help people to quit smoking, in particular an additional £70 million per year to support local authority-led stop smoking services.[294]

419. Due to the uncertainty on the size of the impact that restricting vape flavours would have on the number of current smokers not quitting and ex-smokers that relapse, we have not quantified the health impacts of fewer people using vapes to quit smoking.

Environmental benefits from reduced litter associated with fewer people vaping

420. As described above, the increase in the use of vapes has negative environmental impacts, mainly due to the significant increase in the use of disposable vapes, which are often littered or disposed of incorrectly.

421. The potential impact section illustrated that any restriction of vape flavours is expected to reduce the number of children and adults that vape. As a result, restricting vape flavours is expected to reduce the amount of litter from vapes through reduced uptake of vaping.

422. As explained above, research commissioned by Material Focus[295] found that almost 5 million disposable vapes are either littered or thrown away in general waste every week, equivalent to around 260 million a year. If the estimated reduction in demand for vaping products from Nova Scotia in Canada from restricting flavours of 12.15% is also seen in England, we could expect a similar reduction in the amount of vapes that are littered or thrown away in general waste. This would be equivalent to around 600,000 fewer vapes disposed of each week and around 30 million fewer each year.

423. The purpose of this estimate is to provide an illustration of the potential impact this policy could have on the amount of vapes that are littered. The main limitation is that it assumes that the number of vapes used, and specifically disposable vapes, would decrease by the same amount as the indicative reduction in demand for vapes based on the estimate from Canada.

[294] The allocation of funding in Scotland, Wales and Northern Ireland is the responsibility of relevant ministers in those countries
[295] Material Focus. 2023. Number of disposable single-use vapes thrown away have in a year quadrupled to 5 million per week.

424. Due to uncertainty on the number of young people that would not take up vaping, and number of adults that would stop vaping as a result of restricting vape flavours, we have not quantified the environmental benefits of this policy.

425. If secondary legislation was implemented to restrict vape flavours, then a further impact assessment would be completed, at which point we would look to further quantify the environmental impacts of this policy.

Familiarisation costs

Manufacturers

426. Vape manufacturers would be required to become familiar with the new regulations on flavour restrictions for vapes. We expect that MHRA would provide guidance that manufacturers would have to spend time reviewing.

427. The total cost to vape manufacturers to review the guidance is estimated by multiplying the number of vape manufacturers in the industry by the employee time it would take to review the guidance and the median hourly wage.

428. Based on information provided by MHRA from their vape product notification data, there are around 323 manufacturers of vapes in the UK, and around 71 importers of vapes. It is assumed this is also the number in England. It is also assumed that all 394 manufacturers and importers would have to read the new guidance to ensure that their products are compliant with the new regulations.

429. We estimate the time taken for managers to familiarise themselves with the legislation based on typical technical text reading speeds (75 words per minute[296]). Based on similar guidance that already exists on flavours for food business operators, flavouring producers, and other stakeholders[297], we would expect the new guidance that manufacturers have to review to be about 30 pages long. Each page of the existing flavours guidance contains around 300 words on average. If we take that as a guide to the likely length of the new guidance, we expect it to take each person in the vape manufacturer that needs to read the guidance around 2 hours.

430. It is uncertain how many people in each vape manufacturer would need to review the guidance. For this indicative estimate we have assumed that three managers would need to review the guidance.

431. ONS' Annual Survey of Hours and Earnings (ASHE)[298] provided a median hourly wage for production managers and directors in manufacturing of £21.90. Adjusting this hourly wage for 2025 prices using GDP deflators[299], and by 19% to account for non-wage

[296] EFTEC. 2013. 'Evaluating the cost savings to business from revised EA guidance – method paper' as quoted in BEIS. 2017. Business Impact Target: Appraisal of guidance: assessments for regulator-issued guidance.
[297] FoodDrink Europe. 2019. Guidelines on Flavourings.
[298] ONS. 2023. Annual Survey of Hours and Earnings (ASHE).
[299] HMT. 2014. GDP deflators at market prices, and money GDP.

labour costs[300], the estimated hourly wage for a manager for a vape manufacturer is £27.50.

432. Based on this data, Table 29 shows the indicative estimate of the one-off cost to vape manufacturers in England and the UK to familiarise themselves with the new regulations on which vape flavours they are allowed to sell. As the number of vape manufacturers in England and the UK is assumed to be the same, the indicative estimate for this cost is the same in England and the UK.

Table 29: Familiarisation costs of vape flavour restrictions for vape manufacturers

	England	United Kingdom
2025	£65,000	£65,000

Retailers

433. We also expect that retailers and wholesalers would need to spend time reviewing any new guidance to ensure that they are selling legal products. To estimate this cost for retailers and wholesalers, we use the same assumptions for the time it would take to review the guidance as for manufacturers. However, in practice we would expect retailers and wholesalers to need to spend less time on this.

434. Data we have identified suggests that in the UK there are:

- 49,388 convenience stores[301], of which 70% are independently operated and 7,398 are petrol station forecourt shops[302].
- 5,944 Supermarkets[303, 304], excluding discounters that generally don't sell vapes.
- 3,650 specialist vape shops[305]

435. We do not know what proportion of these sell vapes, so we assume all do. Based on this we estimate there are 58,982 retailers in the UK that sell vapes. Adjusting this based on the proportion of the UK population accounted for by England (c.84%[306]), we estimate that there are 49,751 vape retailers in England.

436. It is assumed that the guidance would only be read by the shopkeeper and owners in each vape shop. We do not expect that staff in the shop would be required to familiarise themselves with the guidance, as it is the shopkeeper and owners that are most likely to

[300]Based on non-wage labour costs as a percentage of total labour costs. ONS estimated that the value of labour costs was estimated at £22.80 per hour at whole economy level and wage costs contributed £19.20, with non-wage costs, such as pensions and National Insurance contributions, making up the rest. Based on this estimate we have uplifted wage costs by 19% to account for non-wage costs. https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/earningsandworkinghours/bulletins/indexoflabourcostsperhourilch/julytoseptember2020
[301] Association of Convenience Stores. 2023. The Local Shop Report 2023.
[302] Association of Convenience Stores. 2023. Forecourt Report 2023.
[303] IGD. 2019. UK Grocery Store Numbers 2018.
[304] Data from 2018 as most recent we have been able to obtain.
[305] Cebr for UKVIA. 2022. Economic impact assessment of the vaping industry.
[306] ONS. 2022. Population estimates for the UK, England, Wales, Scotland and Northern Ireland.

be responsible for ensuring that products in their stores are compliant with the new regulations.

437. ONS' Annual Survey of Hours and Earnings (ASHE) provided a median hourly wage for shopkeepers and owners (retail and wholesale) of £12.83. Adjusting this hourly wage for 2025 prices using GDP deflators[307], and by 19% to account for non-wage labour costs[308], the estimated hourly wage for a manager or a retailer that sells vapes is £16.12.

438. Based on this data, Table 30 shows the indicative estimate of the one-off cost to vape retailers in England and the UK to familiarise themselves with the new regulations on which vape flavours they are allowed to sell.

Table 30: Familiarisation costs of vape flavour restrictions for vape retailers

	England	United Kingdom
2025	£1.6 million	£1.9 million

Wholesalers

439. For wholesalers, data from the ONS' Annual Business Survey[309] (ABS) shows there are 17,294 food, beverage, and tobacco wholesalers in the UK. Due to a lack of specific data for vape wholesalers, it is assumed this is also the number of vape wholesalers in the UK. Adjusting this based on proportion of UK population accounted for by England, there are an estimated 14,587 vape wholesalers in England.

440. As mentioned above, the ONS' Annual Survey of Hours and Earnings (ASHE) provided a median hourly wage for shopkeepers and owners (retail and wholesale) of £12.83. Adjusting this hourly wage for 2025 prices, and by 19% to account for non-wage labour costs, the estimated hourly wage for a manager or a retailer that sells vapes is £16.12.

441. Based on this data, Table 31 shows the indicative estimate of the one-off cost to vape wholesalers in England and the UK to familiarise themselves with the new regulations on which vape flavours they are allowed to sell.

Table 31: Familiarisation costs of vape flavour restrictions for vape wholesalers

	England	United Kingdom
2025	£470,000	£560,000

[307] HMT. 2014. GDP deflators at market prices, and money GDP.
[308] Based on data on the non-wage percentage of labour costs from ONS. 2020. Index of Labour Costs per Hour, UK: July to September 2020.
[309] ONS. 2023. Non-financial business economy, UK: Sections A to S.

Disposal costs

442. If secondary legislation was implemented to restrict vape flavours, it is possible that vape retailers may need to dispose of non-compliant vape products.

443. The extent to which this would be a cost to retailers would depend on the length of any transition period that retailers have to sell any non-compliant products. It would also depend on how much stock of vapes that retailers hold in reserve.

444. It should be noted that in the impact assessment on standardised packaging of tobacco[310], for which there was a 12-month period to sell any non-compliant stock, it was assumed that there 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.

445. Ahead of the government introducing secondary legislation to restrict vape flavours, further information would be sought to better understand the likelihood of this being a significant cost to retailers and inform the length of the transition period.

Reduced profits for vape retailers, manufacturers, and wholesalers

446. The potential impact section illustrated that restricting vape flavours is expected to reduce the number of children and adults that vape. As a result, restricting vape flavours is expected to reduce the profits for vape retailers, wholesalers, and manufacturers through reduced vape sales. In this section, we provide indicative estimates for the loss in profits based on a reduction in sales among all vape users in England. However, it should be noted that, given it is already illegal for ages 17 and under to purchase vapes, any profit retailers, manufacturers, and wholesalers currently gain from sales from ages 17 and under is also illegal.

447. The indicative estimate for the loss in profits is based on the estimated reduction in demand from restricting flavours in Canada, 12.15%, and the specific profit margins for vapes for each stakeholder.

448. Due to the large range of different products available, it is difficult to establish an average price for vape products. For example, e-liquids can cost as little as £0.99, while some vape kits can be over £50[311]. Given the estimate for the average weekly spend on vapes is £6.30[312], it appears vape users purchase multiple vaping products per week. Based on online research, the most popular disposable vape among adults (Elf bar[313]) costs about £4. We assume this to be the average cost of a vape product. This is similar to other estimates we have found for the average cost of vape products. For example, another source suggests that the average price of a pack of vapes is £4.80[314].

[310] The Standardised Packaging of Tobacco Products Regulations 2015 (legislation.gov.uk)
[311] Vape Shop. Vape Shop. (viewed 26 January 2024)
[312] Jackson and others. 2023. How has Expenditure on Nicotine Products Changed in a Fast-Evolving Marketplace? A Representative Population Survey in England, 2018–2022..
[313] Action on Smoking and Health. 2023. Use of e-cigarettes among adults in Great Britain.
[314] The Grocer. 2022. Tobacco & vaping 2022: Disposable vapes drive stunning growth..

449. Assuming a unit cost of £4 per vape, and based on the estimated average weekly spend of vapes (£6.30), the total number of vapes purchased by each vaper is estimated to be around 82 per year.

450. Based on ONS data, 8.4% of people aged 16 and older currently vape in England[315], and based on data from the Smoking, Drinking and Drugs use among Young People Survey 2021 (SDD), 8.6% of 11 to 15 year olds currently vape. This is equivalent to around 4.1 million people currently vaping in England[316]. Based on the estimate that each person purchases around 82 vapes per year, the estimated total number of vapes purchased in England each year is around 340 million.

451. Based on the estimated reduction in demand from restricting vape flavours in Canada, 12.15%, it is estimated that there would be a reduction of around 41 million vape products sold each year in England.

452. We recognise that in the 'do nothing' scenario, the vape market may grow in the future, which means these estimates may be an underestimate of the total number of vapes purchased in future years, and in turn the impact this policy would have on demand and profit losses for retailers, wholesalers, and manufacturers. Given this is an indicative estimate, and we have not identified evidence on how the vape market will develop in future years of the appraisal period, we have not taken market growth into account at this stage. A further impact assessment would be completed ahead of the introduction of any future secondary legislation to restrict vape flavours, at which point we would look for further evidence to consider market growth.

Retailers

453. The Nicotine Inhaling Products age of sale IA[317] estimated retailer profit margins for vapes to be around 10% in the longer term, based on accounts from large retailers and industry reports of profit trends in the industry. As we have not been able to identify any updated estimate, we assume that retailers' profit margin for vapes is 10%. Based on the average unit price for a vape of £4, it is estimated that retailers' profit per vape is £0.36[318].

454. To provide an indicative estimate for the reduction in profit for vape retailers, we adjust the profit per vape for 2025 prices and multiply it by the estimated reduction in vape sales. Future years costs are discounted at a rate of 3.5% in line with The Green Book[319].

455.

[315] ONS. 2023. Adult smoking habits in the UK: 2022..
[316] ONS. 2022. Population estimates for the UK, England, Wales, Scotland and Northern Ireland..
[317] DHSC. 2015. The Nicotine Inhaling Products (Age of Sale and Proxy Purchasing) Regulations 2015 (legislation.gov.uk).
[318] Calculated as the difference between the unit price, and the unit price divided by 1 plus 0.1 (the expected profit margin for retailers of 10%).
[319] HMT. 2022. The Green Book: appraisal and evaluation in central government.

456. Table 32 shows the indicative estimates for the reduction in profit for vape retailers in England and the UK up to 2034 (borne by all vape retailers over 10 years).

Table 32: Reduced profits from restricting vape flavours for vape retailers

	England	United Kingdom
2034	£133 million	£158 million

457. It is likely that any loss in profits will at least be partly offset by increased profits on goods and services purchased in places selling vapes.

Wholesalers

458. The Nicotine Inhaling Products age of sale IA estimated wholesale profit margins at around 3%, given that it is a low profit margin industry with a high degree of competition. As we have not been able to identify any updated estimate, we assume that wholesalers' profit margin for vapes is 3%. Based on the average unit price for a vape of £4, it is estimated that wholesalers' profit per vape is £0.11[320].

459. To provide an indicative estimate for the reduction in profit for vape wholesalers, we adjust this profit per vape for 2025 prices and multiply it by the estimated reduction in vape sales. Future years costs are discounted at a rate of 3.5% in line with The Green Book.

460. Table 33 shows the indicative estimate for the reduction in profit for vape wholesalers in England and the UK up to 2034 (borne by all vape wholesalers over 10 years).

Table 33: Reduced profits from restricting vape flavours for vape wholesalers

	England	United Kingdom
2034	£39 million	£46 million

461. It is likely that any loss in profits will at least be partly offset by increased profits on goods and services purchased in places selling vapes.

Manufacturers

462. The Nicotine Inhaling Products IA estimated manufacturer profit margins at 11% in the longer term, based on accounts filed by two of the largest vape manufacturers. As we have not been able to identify any updated estimate, we assume that manufacturers' profit margin for vapes is 11%. Based on the average unit price for a vape of £4, it is estimated that manufacturers' profit per vape is £0.35[321].

463. To provide an indicative estimate for the reduction in profit for vape manufacturers, we adjust this profit per vape for 2025 prices and multiply it by the estimated reduction in vape sales. Future years costs are discounted at a rate of 3.5% in line with The Green Book.

[320] Calculated as the price minus the profit per vape for retailers and the difference between the price, and the price divided by 1 plus the expected profit margin of 3%.
[321] Calculated as the price minus the profit per vape for retailers and wholesalers and the difference between the price, and the price divided by 1 plus the expected profit margin of 11%.

464. Table 34 shows the indicative estimate for the reduction in profit for vape manufacturers in England and the UK up to 2034 (borne by all vape manufacturers over 10 years).

Table 34: Reduced profits from restricting vape flavours for vape manufacturers

	England	United Kingdom
2034	£128 million	£152 million

465. 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.

Enforcement costs

466. Any restriction of vape flavours could require additional enforcement activity to ensure that non-compliant vapes do not remain on the market. There is a risk that any non-compliant vapes would contain more harmful ingredients. For example, some vapes currently on the market have been found to have high levels of lead, nickel, and chromium[322].

467. There is also evidence from the US that enforcement of any flavour restrictions is important to ensure that it has an impact on the flavours that are used by people that vape. For example, a study based on the impact restricting flavours had on vape use in three US states[323] found that most respondents to the survey continued to use vapes with flavours that had been banned, and out of them, over 45% had purchased them in-state stores.

468. However, as the Bill only provides a regulation making power, there are no enforcement costs arising from this measure. It would be the responsibility of each local authority in England to enforce any regulations that are made using the powers conferred by the Bill to restrict vape flavours.

469. To help support the enforcement of new regulations, as well as tackle underage and illicit sales of tobacco products and vapes, an extra £30 million will be provided to enforcement agencies every year for the next five years. This adds to the work being carried out by Trading Standards and Operation Joseph to tackle underage sales and non-compliant products.

470. The illicit vape market has been increasing over the last few years and could be exacerbated if restrictions to vape flavours were implemented using the powers created by this Bill. Intelligence by Trading Standards and the Chartered Trading Standards Institute estimates that over 25% of the products on the UK market are non-compliant.

[322] BBC. 2023. Vaping: High lead and nickel found in illegal vapes.
[323] Yang and others. 2023. The impact of flavored e-cigarette bans on e-cigarette use in three US states.

Regulate nicotine and non-nicotine vape packaging and product presentation

Rationale for intervention

471. TRPR outlines the requirements relating to the labelling and presentation of vaping products. It sets out what can be written on a unit or container pack of the vape or refill container. Products may not, for example, suggest that a particular vape is less harmful than other vape or refill containers, has revitalising, energising, healing, rejuvenating, natural, or organic properties, and/or has other health or lifestyle benefits. It must also include a health warning.

472. However, unlike tobacco packaging, vape packaging can come in different colours, styles, and shapes. They can include brand names and different types of images and formatting. The products themselves can be designed and displayed differently, in ways that can make them more attractive to children. While mod or tank devices are often wrapped in more neutral packaging, vape liquids and disposable vapes are regularly sold and marketed in a range of brightly coloured designs.

473. Packaging and design features of vapes have been shown to appeal to children[324]. For example, packaging often accentuates sweet or fruit flavours[325], includes cartoons[326], or is designed to resemble food or drink products that are mostly marketed to youth, such as sweets or sugary drinks. All these factors can influence a child's intention to try different vaping products.

474. Multiple countries, including Israel, Denmark, Finland, New Zealand, and the Netherlands have introduced the use of plain standardised packaging of vaping products, and some countries have made it mandatory that packaging must display health warnings.

475. Although no studies have shown the real-world impact of standardised packaging for vaping products, evidence from experimental studies suggests that plain packaging may reduce the appeal of vaping products among youth.

476. Research from King's College London (KCL) and ASH[327] found that youths (aged 11 to 18 years) had lower interest in trying vapes in standardised olive coloured packaging, in comparison to branded packaging. Conversely, there was no difference in appeal of products between branded, and plain standardised packs among adult respondents. This suggests that regulating vape packaging and product presentation may make products less appealing to youth, but not to adult smokers.

[324] Laverty and others. 2016. Design and marketing features influencing choice of e-cigarettes and tobacco in the EU.
[325] Laestadius and others. 2019. From Apple to Werewolf: A content analysis of marketing for e-liquids on Instagram.
[326] Allem and others. 2019. Return of cartoon to market e-cigarette-related products.
[327] Taylor and others. 2023. Association of Fully Branded and Standardized e-Cigarette Packaging With Interest in Trying Products Among Youths and Adults in Great Britain.

477. Another recent study[328] that utilised a cross-sectional online survey to explore interest in trying, and harm perceptions of, vaping products in plain packaging also found that standardised packaging reduced the appeal of vaping products among youth aged 16 to 19 years in England, Canada, and the US. This study found that, compared with branded vape packaging, youths reported lower interest in trying e-liquids in white or olive coloured standardised packaging.

478. In addition, within this study, youths aged 16 to 19 years in England, Canada, and the US were also found to inaccurately perceive e-liquids in white or olive coloured standardised packaging as equally or more harmful than smoking in comparison to e-liquids in branded packaging.

479. This evidence demonstrates that vape packaging and product presentation does influence children's decision to vape, and therefore regulating these aspects of vapes will reduce the attractiveness of vapes to children, and in turn contribute to reducing youth vaping rates.

Description of options considered

480. The Bill provides powers to regulate vaping and nicotine product retail packaging and product requirements.

481. The government has consulted on options that could be implemented using the powers conferred by the Bill, they are:

Option 1: prohibiting the use of cartoons, characters, animals, inanimate objects, and other child friendly imagery, on both the vape packaging and vape device

482. This would still allow for colouring and tailored brand design. 35.8% of respondents to this question were in support of this option.

Option 2: prohibiting the use of all imagery and colouring on both the vape packaging and vape device

483. This would still allow for branding such as logos and names. 18.2% of respondents to this question were in support of this option.

Option 3: prohibiting the use of all imagery and colouring and branding for both the vape packaging and vape device

484. This is equivalent to the standardised packaging rules on tobacco. 46.1% of respondents to this question were in support of this option.

Indicative estimates for the costs and benefits of regulating vape packaging and product presentation

485. This section sets out the expected costs and benefits of regulating vape packaging and product presentation, and where possible provides indicative estimates. As explained above, ahead of the government introducing secondary legislation to regulate vape packaging and product presentation, a further impact assessment of the specific options

[328] Simonavičius and others. 2023. Impact of E-liquid Packaging on Vaping Product Perceptions Among Youth in England, Canada, and the United States: A Randomized Online Experiment.

would be completed and we would seek to improve our estimates, quantify more of the costs and benefits, and provide a NPV and EANDCB for the policy.

Potential impact

486. The outcome of the estimated effect size is the reduction in the number of people we would expect to take up vaping because of regulating vape packaging and product presentation.

487. The impact assessment on standardised packaging of tobacco[329] estimated a reduction of around 11% in the prevalence of ever smoking. As a hypothetical example, assuming a similar scale of impact for standardised packaging regulation of vapes (an 11% reduction), ever vaping prevalence of 20.5% among 11 to 17 year olds based on 2023 figures[330] could decrease to 18.2%.

488. Based on an expert elicitation, it was estimated in the impact assessment on standardised packaging of tobacco that standardised packaging would reduce adult smoking prevalence by 4.8% after two years (meaning 2.4% per year). After accounting for other policies introduced around the same time which affected warnings on tobacco packaging, it was assumed that standardised packaging was estimated to reduce adult smoking prevalence by 3.8% after two years (meaning 1.9% per year).

489. To provide indicative estimates for some of the costs and benefits described below, we have used an estimated reduction in vaping prevalence of 3.8% after two years for the impact regulating vape packaging and product presentation would have in England. We apply this to vaping prevalence for all ages in England.

490. We recognise that regulating vape packaging and product presentation may not have the same impact on vaping prevalence as standardised packaging had on adult smoking prevalence. The exact impact would also depend on how vape packaging and product presentation is regulated. We would expect the impact on adult vaping and uptake of vaping among young people to be less the more choice manufacturers have on how they package and design their products.

Health benefits through reduced uptake of vaping among young people

491. As described above, there are health risks associated with young people vaping, mainly due to the presence of nicotine in vapes, although estimated to be far less harmful than smoking.

492. The potential impact section illustrated that restricting and regulating vape packaging and product presentation is expected to reduce the appeal of vapes to children, and therefore reduce the number of young people that vape. As a result, regulating vape packaging and product presentation is expected to provide health benefits through reduced uptake of vaping among young people.

[329] The Standardised Packaging of Tobacco Products Regulations 2015 (legislation.gov.uk)
[330] Action on Smoking and Health. 2023. Use of e-cigarettes among adults in Great Britain.

493. In the Government of Canada regulatory impact analysis statement for the Tobacco and Vaping Products Act[331], 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 academics in tobacco control.

494. In the Standardised Packaging for tobacco products impact assessment[332], it was estimated the discounted number of life years saved for each young person who does not take up smoking is 1.0. Based on this estimate and the evidence from Canada, and the RCP report we could estimate the number of life years gained for each young person that does not take up vaping to be 0.2. HMT's The Green Book[333] places a value of £70,000 on a QALY. In the impact assessment for Mandating quit information messages inside tobacco packs[334], we explained that it remains appropriate to use the same value of a QALY for life years where QALY estimates are not readily available. Based on the evidence from Canada, for every young person not taking up vaping, the benefits could be £14,000.

495. However, there is still limited evidence on the health impacts of vaping, particularly the long-term harms of vaping and uncertainty on the number of young people that wouldn't take up vaping as a result of regulating vape packaging and product design. As a result, it has not been possible at this stage to quantify the health benefits of the reduction in the number of young people vaping because of this policy.

Health impacts of fewer people using vapes to quit smoking

496. The potential impact section showed that adults that vape would be affected by regulating vape packaging and product presentation. This would include a proportion of adults that vape that use vapes as a smoking quit aid.

497. According to ONS data on adult vaping prevalence[335], 26.5% of adults that currently vape are also current smokers and 16.3% are ex-smokers. The exact impact on the number of smokers not quitting and ex-smokers relapsing as a result of regulating would depend on what vape packaging and product presentation was regulated. Also, even if some smokers and ex-smokers stopped using vapes, it doesn't necessarily mean they would no longer quit or would relapse. There are other quit aids that smokers could try, such as other nicotine replacement therapies. In addition, the Prime Minister's announcements on smoking and vaping on 4 October 2023 included additional investment to help people to quit smoking, in particular an additional £70 million per year to support local authority-led stop smoking services.

[331] Canada Gazette, Part 1, Volume 155, Number 25: Order Amending Schedules 2 and 3 to the Tobacco and Vaping Products Act (Flavours).
[332] DHSC. 2015. The Standardised Packaging of Tobacco Products Regulations 2015 (legislation.gov.uk).
[333] HMT. 2022. The Green Book: appraisal and evaluation in central government.
[334] DHSC. 2023. Tobacco pack inserts impact assessment.
[335] ONS. 2023. Adult smoking habits in the UK: 2022.

498. Due to the uncertainty on the size of the impact that regulating vape packaging and product presentation would have on the number of current smokers not quitting and ex-smokers that relapse, we have not quantified the health impacts of fewer people using vapes to quit smoking.

Environmental benefits from reduced litter associated with fewer people vaping

499. As described above, the increase in the use of vapes has negative environmental impacts, mainly due to the significant increase in the use of disposable vapes, which are often littered or disposed of incorrectly.

500. The effect size section illustrated that regulating vape packaging and product presentation is expected to reduce the number of children and adults that vape. As a result, regulating vape packaging and product presentation is expected to reduce the amount of litter from vapes through reduced uptake of vaping.

501. As explained above, research commissioned by Material Focus[336] found that almost 5 million disposable vapes are either littered or thrown away in general waste every week, equivalent to around 260 million a year. Given this policy would be expected to reduce the number of young people that vape, who predominately use disposable vapes, we would expect this policy to reduce the number of disposable vapes that are littered in England.

502. Due to considerable uncertainty on the number of young people that wouldn't take up vaping, and number of adults that would stop vaping as a result of regulating vape packaging and product presentation, we have not quantified the environmental benefits of this policy.

503. Ahead of the government introducing secondary legislation to regulate vape packaging and product presentation, a further impact assessment would be completed, at which point we would look to further quantify the environmental impacts of this policy.

Familiarisation costs

Manufacturers

504. Vape manufacturers would be required to become familiar with any regulations on the packaging and product presentation of vapes. Guidance would be provided that manufacturers would have to be spend time reviewing.

505. The total cost to vape manufacturers to review the guidance is estimated by multiplying the number of vape manufacturers in the industry by the employee time it would take to review the guidance and the median hourly wage.

506. Based on information provided by MHRA from their vape product notification data, there are around 323 manufacturers of vapes in the UK, and around 71 importers of vapes. It is assumed this is also the number in England. It is also assumed that all 394

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

manufacturers and importers would expect have to read the new guidance to ensure that their products are compliant with the new regulations.

507. We estimate the time taken for managers to familiarise themselves with the legislation based on typical technical text reading speeds (75 words per minute)[337]. Based on similar guidance that already exists on vape labelling[338] and product presentation[339], we would expect the new guidance that manufacturers have to review to be about 2000 words long. We would expect it to take each person in the vape manufacturer that needs to read the guidance around 27 minutes.

508. It is uncertain how many people in each vape manufacturer would need to review the guidance. For this indicative estimate, we have assumed that three managers would need to review the guidance.

509. ONS' Annual Survey of Hours and Earnings (ASHE)[340] provided a median hourly wage for production managers and directors in manufacturing of £21.88. Adjusting this hourly wage for 2025 prices using GDP deflators[341], and by 19% to account for non-wage labour costs[342], the estimated hourly wage for a manager for a vape manufacturer is £27.54.

510. Based on this data, Table 35 shows the indicative estimate of the one-off cost to vape manufacturers in England and the UK to familiarise themselves with the new regulations on vape packaging and product presentation. As the number of vape manufacturers in England and the UK is assumed to be the same, the indicative estimate for this cost is the same in England and the UK.

Table 35: Familiarisation costs of regulations for vape packaging and product presentation for vape manufacturers

	England	**United Kingdom**
2025	£14,000	£14,000

[337] EFTEC. 2013. Evaluating the cost savings to business from revised EA guidance – method paper.
[338] MHRA. 2022. Chapter 8 – Labelling Guidance – Great Britain.
[339] MHRA. 2022. Chapter 5 - Presentation Guidance - Great Britain.
[340] ONS. 2023. Annual Survey of Hours and Earnings (ASHE).
[341] HMT. 2014. GDP deflators at market prices, and money GDP.
[342] Based on non-wage labour costs as a percentage of total labour costs. ONS estimated that the value of labour costs was estimated at £22.80 per hour at whole economy level and wage costs contributed £19.20, with non-wage costs, such as pensions and National Insurance contributions, making up the rest. Based on this estimate we have uplifted wage costs by 19% to account for non-wage costs. https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/earningsandworkinghours/bulletins/indexoflabourcostsperhourilch/julytoseptember2020

Retailers

511. We also expect that retailers and wholesalers would need to spend time reviewing any new guidance to ensure that they are selling legal products. To estimate this cost for retailers and wholesalers, we use the same assumptions for the time it would take to review the guidance as for manufacturers. However, in practice we would expect retailers and wholesalers to need to spend less time on this.

512. Data we have identified suggests that in the UK there are:

- 49,388 convenience stores[343], of which 70% are independently operated and 7,398 are petrol station forecourt shops[344]
- 5,944 Supermarkets[345,346] , excluding discounters that generally don't sell vapes
- 3,650 specialist vape shops[347]

513. We do not know what proportion of these sell vapes, so we assume all do. Based on this, we estimate there are 58,982 retailers in the UK that sell vapes. Adjusting this based on the proportion of the UK population accounted for by England (c.84%[348]), we estimate that there are 49,751 vape retailers in England.

514. It is assumed that the guidance would only be read by the shopkeeper and owners in each vape shop. 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.

515. ONS' Annual Survey of Hours and Earnings (ASHE) provided a median hourly wage for shopkeepers and owners (retail and wholesale) of £12.83. Adjusting this hourly wage for 2025 prices using GDP deflators[349], and by 19% to account for non-wage labour costs[350], the estimated hourly wage for a manager or a retailer that sells vapes is £16.12.

516. Based on this data, Table 36 shows the indicative estimate of the one-off cost to vape retailers in England and the UK to familiarise themselves with the new regulations on vape packaging and product presentation.

Table 36: Familiarisation costs of regulations for vape packaging and product presentation for vape retailers

	England	**United Kingdom**
2025	£370,000	£440,000

[343] Association of Convenience Stores. 2023. The Local Shop Report 2023.
[344] Association of Convenience Stores. 2023. Forecourt Report 2023.
[345] IGD. 2019. UK Grocery Store Numbers 2018.
[346] Data from 2018 as most recent we have been able to obtain.
[347] Cebr for UKVIA. 2022. Economic impact assessment of the vaping industry.
[348] ONS. 2022. Population estimates for the UK, England, Wales, Scotland and Northern Ireland.
[349] HMT. 2014. [349] HMT. 2014. GDP deflators at market prices, and money GDP.
[350] Based on data on the non-wage percentage of labour costs from ONS. 2020. Index of Labour Costs per Hour, UK: July to September 2020.

Wholesalers

517. For wholesalers, data from the ONS' Annual Business Survey[351] (ABS) shows there are 17,294 food, beverage, and tobacco wholesalers in the UK. Due to a lack of specific data for vape wholesalers, it is assumed this is also the number of vape wholesalers in the UK.

518. As mentioned above, the ONS' Annual Survey of Hours and Earnings (ASHE) provided a median hourly wage for shopkeepers and owners (retail and wholesale) of £12.83. Adjusting this hourly wage for 2025 prices, and by 19% to account for non-wage labour costs, the estimated hourly wage for a manager or a retailer that sells vapes is £16.12.

519. Based on this data, Table 37 shows the indicative estimate of the one-off cost to vape wholesalers in England and the UK to familiarise themselves with the new regulations on vape packaging and product presentation.

Table 37: Familiarisation costs of regulations for vape packaging and product presentation for vape wholesalers

	England	United Kingdom
2025	£120,000	£150,000

Impact upon costs of manufacturing packaging and products

520. Regulations on vape packaging and product presentation would mean vape manufacturers would have to make changes to the packaging and design of their products.

521. The exact cost to manufacturers would depend on how much they need to change their packaging and product design, and the number of products, known as Stock Keeping Units (SKUs), they have on the market.

522. The impact assessment for the Tobacco and Related Products Regulations (TRPR) 2016[352] provided estimates for the costs to tobacco and vape manufacturers to add new warnings on the packaging of their products. RAND Europe[353] assessed the potential one-off costs faced by manufacturers in order to redesign packaging. It was estimated that for tobacco manufacturers who were required to include pictorial warnings on packs of cigarettes and hand-rolling tobacco, it would cost between £17,000 and £19,000 per SKU. For minor redesigns of packaging, which was what vape manufacturers were assumed to need to make, evidence from the food industry suggested that a minor redesign costs £1,700 to £3,400 per SKU, whilst a major redesign costs £5,900 to £7,600[353].

523. Data from MHRA notification system suggests that there are over 500,000 notified vaping products legal for supply in the UK market. However, a lot of these products are unlikely to still be produced by manufacturers, so the number of products that vape

[351] ONS. 2023. Non-financial business economy, UK: Sections A to S.
[352] The Tobacco and Related Products Regulations 2016 - Impact Assessment.
[353] Tiessen and others. 2011. Assessing the impacts of Revising the Tobacco Products Directive: Study to support a DG SANCO Impact Assessment.

manufacturers would have to redesign and change the packaging for as a result of any regulations would be much lower than this.

524. Due to the large range in the possible cost of making changes to the design of vape packaging and products, and the uncertainty of the number of products that would require any redesigns, we have not provided an indicative estimate for this cost.

525. Ahead of the government introducing secondary legislation to regulate vape packaging and presentation, a further impact assessment would be completed, at which point we would seek further evidence to quantify this cost.

Increase in transaction times

526. If packaging for vapes becomes more standardised, we could expect it to take longer for shop assistants to select and serve a customer purchasing a vape. If this is the case retailers would bear some costs.

527. To estimate the cost of additional serving time to retailers, we can multiply the additional serving time by the estimated number of vape sales, and by the average hourly wage of a sales assistant.

528. In the Standardised Packaging of Tobacco Products Regulations 2015 (SPoT) impact assessment[354], it was expected that there would be a 2 second increase in transaction times for 1 month post-implementation. This was based on a study from Australia[355], where standardised packaging was introduced before it was in the UK.

529. No further evidence from a study on the impact of standardised tobacco packaging for small businesses, or the consultation for the post-implementation review (PIR) of the SPoT[356], identified any evidence to contradict this assumption. Therefore, we assume the same additional serving time would be required for vape sales for a month post-implementation.

530. Based on ONS data, 8.4% of people aged 16 and older currently vape in England[357], and based on data from the Smoking, Drinking and Drugs use among Young People Survey 2021 (SDD), 8.6% of 11 to 15 year olds currently vape. This is equivalent to around 4.1 million people currently vaping in England[358].

531. Based on an average weekly spend of £6.30[359], yearly vape spend would be £327.60.

532. Multiplying the estimated number of people that currently vape in England by the estimated yearly spend on vapes gives an estimated total annual spend on vapes in England of around £1.36 billion per year.

[354] DHSC. 2015. Standardised Packaging of Tobacco Products impact assessment.
[355] Wakefield and others. 2013. Product retrieval time in small tobacco retail outlets before and after the Australian plain packaging policy: real-world study.
[356] OHID. 2022. The Standardised Packaging of Tobacco Products Regulations 2015: post-implementation review.
[357] ONS. 2023. Adult smoking habits in the UK: 2022.
[358] ONS. 2022. Population estimates for the UK, England, Wales, Scotland and Northern Ireland.
[359] Jackson and others. How has Expenditure on Nicotine Products Changed in a Fast-Evolving Marketplace? A Representative Population Survey in England, 2018–2022..

533. Due to the large range of different products available, it is difficult to establish an average price for vape products. For example, e-liquids can cost as little as £0.99, while some vape kits can be over £50[360]. Given the estimate for the average weekly spend on vapes is £6.30[361], it appears vape users purchase multiple vaping products per week. Based on online research, the most popular disposable vape among adults (Elf bar[362]) costs about £4. We assume this to be the average cost of a vape product.

534. Assuming a unit cost of £4 per vape, the total number of transactions would be around 340 million.

535. ONS' Annual Survey of Hours and Earnings (ASHE) provided a median hourly wage for retail assistants of £10.12. Adjusting this hourly wage for 2025 prices, and by 19% to account for non-wage labour costs, the estimated hourly wage for a retail assistant is £12.73.

536. Based on this data, Table 38 shows the indicative estimated cost to vape retailers in England and the UK of additional serving time following changes to vape packaging regulations.

Table 38: Cost of increase in transaction times due to regulating vape packaging and product presentation for vape retailers

	England	**United Kingdom**
2025	£210,000	£250,000

537. It is possible that this is an overestimate of the actual cost. The estimate for the number of transactions assumes that each person only ever buys one vape at a time. If it is the case that in some instances people purchase multiple vapes simultaneously, this would reduce the total number of vape transactions per year and reduce the cost of any increase in transaction times.

538. The size of this cost will also depend on the exact details of any regulations that are introduced through secondary legislation. The cost will likely be higher the more standardised the packaging is required to be. The indicative cost estimated is most likely to be closest to the cost under Option 3 in the consultation, which prohibits the use of all imagery, colouring and branding on vape packaging. In contrast, the cost would likely be significantly less under Option 1 in the consultation, as vape manufacturers would still be able to vary the branding and colours on the packaging, making it easier for retailers to identify the different products.

[360] Vape Shop. Vape Shop. viewed 1 October 2023)
[361] Jackson and others. How has Expenditure on Nicotine Products Changed in a Fast-Evolving Marketplace? A Representative Population Survey in England, 2018–2022..
[362] Action on Smoking and Health. 2023. Use of e-cigarettes among adults in Great Britain 2023.

Disposal costs

539. If secondary legislation was implemented to restrict vape flavours, it is possible that vape retailers may need to dispose of non-compliant vape products.

540. The extent to which this would be a cost to retailers would depend on the length on any transition period that retailers have to sell any non-compliant products. It would also depend on how much stock of vapes that retailers hold in reserve.

541. It should be noted that in the impact assessment on standardised packaging of tobacco[363], for which there was a 12-month period to sell any non-compliant stock, it was assumed that 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.

542. If any regulations were introduced through secondary legislation, further information would be sought to better understand the likelihood of this being a significant cost to retailers and inform the length of the transition period.

Reduced profits for vape retailers, manufacturers, and wholesalers

543. The effect size illustrated that regulating vape packaging and product presentation is expected to reduce the number of children and adults that vape. As a result, regulating vape packaging and product presentation is expected to reduce the profits for vape retailers, wholesalers, and manufacturers through reduced vape sales. In this section we provide indicative estimates for the loss in profits based on a reduction in sales among all people that currently vape in England. However, it should be noted that, given it is already illegal for ages 17 and under to purchase vapes, any profit retailers, manufacturers, and wholesalers currently gain from sales from ages 17 and under is also illegal.

544. The indicative estimate for the loss in profits is calculated by multiplying the reduction in sale in vapes by the specific profit margins for vapes for each stakeholder.

545. The indicative estimates for the loss in profits is based on the estimated reduction in adult vaping prevalence from the impact standardised packaging was expected to have on smoking prevalence, 1.9% per year for two years, and the specific profit margins for vapes for each stakeholder.

546. Based on an average weekly spend of £6.30[364], yearly vape spend would be £327.60. Due to the large range of different products available, it is difficult to establish an average price for vape products. For example, e-liquids can cost as little as £0.99, while some vape kits can be over £50[365]. Given the estimate for the average weekly spend on vapes (£6.30), it appears vape users purchase multiple vaping products per week. Based on online research, the most popular disposable vape among adults (Elf bar[366])

[363] The Standardised Packaging of Tobacco Products Regulations 2015 (legislation.gov.uk)
[364] Jackson and others. How has Expenditure on Nicotine Products Changed in a Fast-Evolving Marketplace? A Representative Population Survey in England, 2018–2022..
[365] Vape Shop. Vape Shop. (viewed 26 January 2024)
[366] Action on Smoking and Health. 2023. Use of e-cigarettes among adults in Great Britain 2023.

costs about £4. We assume this to be the average cost of a vape product. This is similar to other estimates we have found for the average cost of vape products. For example, another source suggests that the average price of a pack of vapes is £4.80[367].

547. Assuming a unit cost of £4 per vape, based on the estimated average weekly spend of vapes (£6.30), the total number of vapes purchased by each vaper is estimated to be around 82 per year.

548. Based on ONS data, 8.4% of people aged 16 and older currently vape in England[368], and based on data from the Smoking, Drinking and Drugs use among Young People Survey 2021 (SDD), 8.6% of 11 to 15 year olds currently vape. This is equivalent to around 4.1 million people currently vaping in England[369]. Based on the estimate that each person purchases around 82 vapes per year, the estimated total number of vapes purchased in England each year is around 340 million.

549. Based on the estimated reduction in adult vaping prevalence, 1.9% per year for two years, it is estimated that the number of people that vape in England would reduce by around 80,000 in each of these years. Based on the estimated number of vapes purchased by each vaper each year, around 82, it is estimated that there would be a reduction of around 120 million over the 10 year appraisal period.

550. We recognise that in the 'do nothing' scenario the vape market may grow in the future, which means these estimates may be an underestimate of the total number of vapes purchased in future years, and in turn, the impact this policy would have on demand and profit losses for retailers, wholesalers, and manufacturers. Given this is an indicative estimate and we have not identified evidence on how the vape market will develop in future years of the appraisal period, we have not taken market growth into account at this stage. If secondary legislation was introduced, then a further impact assessment would be completed, at which point we would look for further evidence to take into account market growth.

Retailers

551. The Nicotine Inhaling Products age of sale IA[370] estimated retailer profit margins for vapes to be around 10% in the longer term, based on accounts from large retailers and industry reports of profit trends in the industry. As we have not been able to identify any updated estimate, we assume that retailers' profit margin for vapes is 10%. Based on the average unit price for a vape of £4, it is estimated that retailers' profit per vape is £0.36[371].

[367] The Grocer. 2022. Tobacco & vaping 2022: Disposable vapes drive stunning growth.
[368] ONS. 2023. Adult smoking habits in the UK: 2022.
[369] ONS. 2022. Population estimates for the UK, England, Wales, Scotland and Northern Ireland.
[370] DHSC. 2015. The Nicotine Inhaling Products (Age of Sale and Proxy Purchasing) Regulations 2015.
[371] Calculated as the difference between the price, and the price divided by 1 plus the expected profit margin for retailers of 10%.

552. To provide an indicative estimate for the reduction in profit for vape retailers, we adjust the profit per vape for 2025 prices and multiply it by the estimated reduction in vape sales. Future years costs are discounted at a rate of 3.5% in line with The Green Book[372].

553. Table 39 shows the indicative estimates for the reduction in profit for vape retailers in England and the UK up to 2034 (borne by all vape retailers over 10 years).

554. 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.

Table 39: Reduced profits from regulating vape packaging and product presentation for vape retailers

	England	United Kingdom
2034	£38.6 million	£45.7 million

Wholesalers

555. The Nicotine Inhaling Products age of sale IA estimated wholesalers' profit margins at around 3%, given that it is a low profit margin industry with a high degree of competition. As we have not been able to identify any updated estimate, we assume that wholesalers' profit margin for vapes is 3%. Based on the average unit price for a vape of £4, it is estimated that wholesalers' profit per vape is £0.11[373].

556. To provide an indicative estimate for the reduction in profit for vape wholesalers, we adjust the profit per vape for 2025 prices and multiply it by the estimated reduction in vape sales. Future years costs are discounted at a rate of 3.5% in line with The Green Book.

557. Table 40 shows the indicative estimates for the reduction in profit for vape wholesalers in England and the UK up to 2034 (borne by all vape wholesalers over 10 years).

Table 40: Reduced profits from regulating vape packaging and product presentation for vape wholesalers

	England	United Kingdom
2034	£11.2 million	£13.3 million

558. 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.

[372] HMT. 2022. The Green Book: appraisal and evaluation in central government.
[373] Calculated as the price minus the profit per vape for retailers and the difference between the price, and the price divided by 1 plus the expected profit margin of 3%.

Manufacturers

559. The Nicotine Inhaling Products IA estimated manufacturers' profits margins at 11% in the longer term, based on accounts filed by two of the largest vape manufacturers. As we have not been able to identify any updated estimate, we assume that manufacturers' profit margin for vapes is 11%. Based on the average unit price for a vape of £4, it is estimated that manufacturers' profit per vape is £0.35[374].

560. To provide an indicative estimate for the reduction in profit for vape manufacturers, we adjust the profit per vape for 2025 prices and multiply it by the estimated reduction in vape sales. Future years costs are discounted at a rate of 3.5% in line with The Green Book.

561. Table 41 shows the indicative estimates for the reduction in profit for vape manufacturers in England and the UK up to 2034 (borne by all vape manufacturers over 10 years).

Table 41: Reduced profits from regulating vape packaging and product presentation for vape manufacturers

	England	**United Kingdom**
2034	£37.1 million	£44.0 million

562. 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.

Enforcement costs

563. As The Bill only provides a regulation making power, there are no enforcement costs arising from this measure. It would be the responsibility of each local authority in England to enforce any regulations that are made using the powers conferred by the Bill to restrict vape flavours.

564. To help support the enforcement of new regulations, as well as tackle underage and illicit sales of tobacco products and vapes, an extra £30 million will be provided to enforcement agencies every year for the next five years. This adds to the work being carried out by Trading Standards and Operation Joseph to tackle underage sales and non-compliant products.

565. The illicit vape market has been increasing over the last few years and could be exacerbated if vape packaging and product packaging regulations were implemented using the powers created by this Bill. Intelligence by Trading Standards and the Chartered Trading Standards Institute estimates that over 25% of the products on the UK market are non-compliant.

[374] Calculated as the price minus the profit per vape for retailers and wholesalers and the difference between the price, and the price divided by 1 plus the expected profit margin of 11%.

Regulating point of sale displays for nicotine and non-nicotine vapes

Rationale for intervention

566. There are currently no restrictions around the display of vapes at the point of sale in shops.

567. A recent observational study published in 2022[375] explored the nature and prevalence of vape point of sale displays in major retailers of tobacco in two areas of England. The study found that point of sale displays were near ubiquitous and highly visible in major tobacco retailers.

568. Analysis from Imperial College London looked at data collected in the annual ASH survey of youth vaping[376]. Comparing 12,445 responses to an online survey by children aged between 11 to 18 over the 5 years from 2018 to 2022, researchers found increases in the proportion of children reporting that they had seen vapes on display in shops.

- In supermarkets, the likelihood of noticing vapes increased from 57.4% in 2018 to 66.5% in 2022.

- In small shops, the likelihood of noticing vapes increased from 70.8% to 71.6%.

569. This is important to acknowledge, as two experimental studies have found that young people who are exposed to retail displays relating to tobacco products, including vapes, may be more susceptible to smoking if they regularly visit retail stores[377], and be more willing to use vapes in the future, compared with those not exposed to the displays[378].

570. A cross sectional survey[379] conducted in Scotland also identified that adolescents who recalled seeing vapes point of sale displays in small shops and online were more likely to have tried a vape. In addition, adolescents who recalled seeing vape point of sale displays in small shops and supermarkets were more likely to intend to use vapes in the next 6 months.

571. This evidence demonstrates that children notice point of sale displays for vapes in shops, which may impact children's attitudes and behaviours towards vaping. Therefore, we would expect that regulating point of sale displays for vapes will reduce the likelihood of children noticing vapes in shops, which in turn will contribute to reducing youth vaping rates.

[375] Brocklebank and others. 2022. Electronic cigarette and smoking paraphernalia point of sale displays: an observational study in England.
[376] Parnham and others. 2023. Changing awareness and sources of tobacco and e-cigarettes among children and adolescents in Great Britain.
[377] Blackwell and others. 2023. Impact of e-cigarette retail displays on attitudes to smoking and vaping in children: an online experimental study.
[378] Dunbar and others. 2019. Exposure to the Tobacco Power Wall Increases Adolescents' Willingness to Use E-cigarettes in the Future.
[379] Best and others. 2016. Relationship between e-cigarette point of sale recall and e-cigarette use in secondary school children: a cross-sectional study.

Description of options considered

572. The Bill provides regulation making powers to regulate displays of vaping and nicotine products.

573. The government has consulted on options that could be implemented using the powers conferred by the Bill, they are:

Option 1: Vapes must be kept behind the counter and cannot be on display

574. This is equivalent to the point-of-sale display restrictions for tobacco products. 68.3% of those who responded to this question selected this option.

Option 2: Vapes must be kept behind the counter but can be on display

575. 31.7% of respondents to this question selected this option.

Indicative estimates for the costs and benefits of regulating point of sale displays

576. This section sets out the expected costs and benefits of regulating point of sale displays for vapes, and where possible provides indicative estimates. As explained above, ahead of the government introducing secondary legislation to restrict point of sale display, a further impact assessment of the specific options would be completed.

Potential impact

577. The outcome of the estimated effect size is the reduction in the number of people we would expect to take up vaping because of regulating point of sale displays.

578. There is limited evidence on the impact of vape displays in shops on the current vaping rates. However, we can draw parallels from the display regulations currently in place for tobacco (option 1). The impact assessment on the prohibition of tobacco displays in shops[380] estimated a reduction of around 15% in the prevalence of regular smokers aged 11 to 15. As a hypothetical example, assuming a similar scale of impact for display regulation of vapes (a 15% reduction), regular vaping prevalence of 3.7% among those aged 11 to 17, based on 2023 figures, could decrease to 3.1%.

579. For adults, the impact assessment on the prohibition of tobacco displays in shops estimated an average annual reduction in smoking prevalence of 0.04 percentage points over 10 years. As a hypothetical example, assuming a similar scale of impact for display regulation of vapes, adult vaping prevalence could reduce from 8.4%, based on 2022 figures, to 8.0% after 10 years.

580. To provide indicative estimates for some of the costs and benefits described below, we have used an estimated reduction in current vaping prevalence of 0.04 percentage points for people aged 11 and older in England.

[380] Department of Health. 2011. Impact assessment on the Prohibition of Display of Tobacco Products at the Point of Sale in England.

581. We recognise that regulating vape point of sale displays may not have the same impact on vaping prevalence for all ages as the prohibition of tobacco displays in shops had on adult smoking prevalence. The exact impact would also depend on how vape packaging and product presentation is regulated. We would expect the impact on vaping prevalence to be smaller the less prohibitive any regulations on vape point of sale displays are, but also have less of an impact on reducing uptake of vaping among young people.

Health benefits through reduced uptake of vaping among young people

582. As described above, there are health risks associated with young people vaping, mainly due to the presence of nicotine in vapes, although estimated to be far less harmful than smoking.

583. The potential impact section illustrated that regulating vape point of sale displays is expected to reduce the appeal of vapes to children, and therefore reduce the number of young people that vape. As a result, regulating vape point of sale displays is expected to provide health benefits through reduced uptake of vaping among young people.

584. In the Government of Canada regulatory impact analysis statement for the Tobacco and Vaping Products Act[381], 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 academics in tobacco control.

585. In the Standardised Packaging for Tobacco Products impact assessment[382], it was estimated the discounted number of life years saved for each young person who does not take up smoking is 1.0. Based on this estimate and the evidence from Canada and the RCP report, we could estimate the number of life years gained for each young person that does not take up vaping to be 0.2. HMT's The Green Book[383] places a value of £70,000 on a QALY. In the impact assessment for Mandating quit information messages inside tobacco packs[384], we explained that it remains appropriate to use the same value of a QALY for life years where QALY estimates are not readily available. Based on the evidence from Canada and the RCP report, for every young person not taking up vaping, the benefits could be £14,000.

586. However, there is still limited evidence on the health impacts of vaping, particularly the long-term harms of vaping and uncertainty on the number of young people that wouldn't take up vaping as a result of regulating vape point of sale displays. As a result, it has not been possible at this stage to quantify the health benefits of the reduction in the number of young people vaping because of this policy.

[381] Canada Gazette, Part 1, Volume 155, Number 25: Order Amending Schedules 2 and 3 to the Tobacco and Vaping Products Act (Flavours).
[382] DHSC. 2015. The Standardised Packaging of Tobacco Products.
[383] HMT. 2022. The Green Book: appraisal and evaluation in central government.
[384] DHSC. 2023. Tobacco pack inserts impact assessment.

Health impacts of fewer people using vapes to quit smoking

587. The potential impact section showed that adults that vape would be affected by regulating point of sales displays for vapes. This would include a proportion of adults that use vapes as a smoking quit aid.

588. According to ONS data on adult vaping prevalence[385], 26.5% of adults that currently vape are also current smokers, and 16.3% are ex-smokers.

589. The exact impact would depend on how vape point of sale displays are regulated. Also, even if some smokers and ex-smokers stopped using vapes, it doesn't necessarily mean they would no longer quit or relapse. There are other quit aids that smokers could try, such as other nicotine replacement therapies. In addition, the Prime Minister's announcements on smoking and vaping on 4 October 2023 included additional investment to help people to quit smoking, in particular, an additional £70 million per year to support local authority-led stop smoking services.

590. Due to the uncertainty on the size of the impact that regulating vape point of sale displays would have on the number of current smokers not quitting and ex-smokers that relapse, we have not quantified the health impacts of fewer people using vapes to quit smoking.

Environmental benefits from reduced litter associated with fewer people vaping

591. As described above, the increase in the use of vapes has negative environmental impacts, mainly due to the significant increase in the use of disposable vapes, which are often littered or disposed of incorrectly.

592. The effect size section illustrated that regulating point of sale displays is expected to reduce the number of children and adults that vape. As a result, regulating point of sale displays is expected to reduce the amount of litter from vapes through reduced uptake of vaping.

593. As explained above, research commissioned by Material Focus[386] found that almost 5 million disposable vapes are either littered or thrown away in general waste every week, equivalent to around 260 million a year. Given this policy would be expected to reduce the number of young people that vape, who predominately use disposable vapes, we would expect this policy to reduce the number of disposable vapes that are littered in England.

594. Due to considerable uncertainty on the number of young people that wouldn't take up vaping and number of adults that would stop vaping as a result of regulating point of sale displays for vapes, we have not quantified the environmental benefits of this policy.

[385] ONS. 2023. Adult smoking habits in the UK: 2022.
[386] Material Focus. 2023. Number of disposable single-use vapes thrown away have in a year quadrupled to 5 million per week.

Familiarisation costs

595. Vape retailers would be required to become familiar with any regulations on point of sale displays for vapes. Guidance would be provided that retailers would have to spend time reviewing.

596. The total cost to vape retailers to review the guidance is estimated by multiplying the number of vape retailers in the industry by the employee time it would take to review the guidance and the median hourly wage.

597. We estimate the time taken for managers to familiarise themselves with the legislation based on typical technical text reading speeds (75 words per minute)[387]. Based on previous guidance on the display and pricing of tobacco products in England for retailers[388], we would expect the new guidance that retailers would have to review to be about 8000 words long. We would expect it to take retailers around 1 hour 30 minutes to review.

598. Data we have identified suggests that in the UK there are:

- 49,388 convenience stores[389], of which 70% are independently operated and 7,398 are petrol station forecourt shops[390].
- 5,944 Supermarkets[391, 392], excluding discounters that generally don't sell vapes,
- 3,650 specialist vape shops[393]

599. We do not know what proportion of these sell vapes, so we assume all do. Based on this, we estimate there are 58,982 retailers in the UK that sell vapes. Adjusting this based on the proportion of the UK population accounted for by England (c.84%[394]), we estimate that there are 49,751 vape retailers in England.

600. It is assumed that the guidance would only be read by one shopkeeper or owner in each vape shop. 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 the point of sale displays in their stores are compliant with any new regulations.

601. ONS' Annual Survey of Hours and Earnings (ASHE) provided a median hourly wage for shopkeepers and owners (retail and wholesale) of £12.83. Adjusting this hourly wage for 2025 prices using GDP deflators[395], and by 19% to account for non-wage labour

[387] Economics For The Environment Consultancy. 2013. "Evaluating the cost savings to business from revised EA guidance – method paper".
[388] DH and Chartered Trading Standards Institute. Guidance on the display and pricing of tobacco products in England, for tobacco retailers and enforcement officers.
[389] Association of Convenience Stores. 2023. The Local Shop Report 2023.
[390] Association of Convenience Stores. 2023. Forecourt Report 2023.
[391] IGD. 2019. UK Grocery Store Numbers 2018.
[392] Data from 2018 as most recent we have been able to obtain.
[393] Cebr for UKVIA. 2022. Economic impact assessment of the vaping industry.
[394] ONS. 2022. Population estimates for the UK, England, Wales, Scotland and Northern Ireland.
[395] HMT. 2014. GDP deflators at market prices, and money GDP

costs[396], the estimated hourly wage for a manager or a retailer that sells vapes is £16.12.

602. Based on this data, Table 42 shows the indicative estimate of the one-off cost to vape retailers in England and the UK to familiarise themselves with any new regulations on vape point of sale displays.

Table 42: Familiarisation costs of regulations for point of sale displays for vapes for vape retailers

	England	United Kingdom
2025	£1.2 million	£1.5 million

Storage installation costs

603. If secondary legislation was implemented to regulate point of sale displays for vapes, retailers that sell vapes would need to install new storage units.

604. The cost to retailers is estimated by multiplying the number of stores that would need to install new storage by the cost of installing the necessary storage.

605. As explained above, there are an estimated 49,751 retailers in England that sell vapes.

606. The impact assessment for the prohibition of the display of tobacco products at the point of sale[397] estimated that installing magnetic covers would cost £450 per small store and £850 per large store (in 2010). The PIR for the tobacco point of sale display ban[398] did not find any further evidence that could be verified to suggest a higher cost per store. As we do not know the split of the type of stores, we could use the mid-point of this range (£600) to give an estimate for the cost per store of installing the necessary storage units in each store that sells vapes. As this estimate is quite old now, we have adjusted it to 2025 prices using the GDP deflator[399] to account for inflation. The updated estimate for the cost per store of installing necessary storage units is £820.

607. A large amount of shops that sell vapes that will need to install storage will likely already have storage cabinets due to selling tobacco. For non-specialist and specialist retailers of food, beverages, and tobacco, it is assumed that only 50% of the storage cost would apply. For specialist vape shops, 100% of the storage cost is assumed to apply.

608. Based on this data, Table 43 shows the indicative estimate for the one-off cost to vape retailers of installing necessary storage to ensure vapes are not on display in shops (of which around £2.5 million is for specialist vape shops).

Table 43: Storage installation costs for vape retailers

	England	United Kingdom
2025	£21.7 million	£25.7 million

[396] Based on data on the non-wage percentage of labour costs from ONS. 2020. Index of Labour Costs per Hour, UK: July to September 2020.
[397] DHSC. 2011. Impact Assessment on the Prohibition of Display of Tobacco Products at the Point of Sale in England
[398] DHSC. 2021. A Post Implementation Review Report of Tobacco Legislation Coming into Force Between 2010-2015
[399] HMT. 2014. GDP deflators at market prices, and money GDP.

609. In Table 43, around £2.5 million of the costs are for specialist vape shops in England, and around £3 million are for specialist vape shops in the UK.

610. This cost is likely to be significantly lower under any regulations that are enacted that still allow vapes to be on display in shops. In addition, retailers that sell tobacco are already not allowed to display tobacco products in shops, and keep them in a storage unit. Therefore, at least a proportion of retailers that sell tobacco and vapes would already have the necessary storage units and would not incur any additional costs.

611. Ahead of the government introducing secondary legislation, further information would be sought to better understand this cost.

Increase in transaction times

612. If secondary legislation was implemented to regulate point of sale displays for vapes, it is likely to take longer for retailers to serve customers. If this is the case, retailers would bear some costs.

613. To estimate the cost of additional serving time to retailers, we can multiply the additional serving time by the estimated number of vape sales, and by the average hourly wage of a sales assistant.

614. In the impact assessment for the prohibition of the display of tobacco products at the point of sale[400], it was estimated that serving time would increase by 2 seconds per transaction. The PIR for the tobacco point of sale display ban did not find any further evidence to suggest a different increase in serving time. Therefore, we assume the same additional serving time would be required for vape sales.

615. Based on ONS data, 8.4% of people aged 16 and older currently vape in England[401], and based on data from the Smoking, Drinking and Drugs use among Young People Survey 2021 (SDD), 8.6% of 11 to 15 year olds currently vape. This is equivalent to around 4.1 million people currently vaping in England[402].

616. Multiplying the estimated number of people that currently vape in England by the estimated yearly spend on vapes gives an estimated total annual spend on vapes in England of around £1.36 billion per year.

617. Due to the large range of different products available, it is difficult to establish an average price for vape products. For example, e-liquids can cost as little as £0.99, while some vape kits can be over £50[403]. Given the estimate for the average weekly spend on vapes is £6.30[404], it appears that people that vape purchase multiple vaping products per week. Based on online research, the most popular disposable vape among adults (Elf bar[405]) costs about £4, We assume this to be the average cost of a vape product.

[400] Department of Health. 2011. Impact Assessment on the Prohibition of Display of Tobacco Products at the Point of Sale in England
[401] ONS. 2023. Adult smoking habits in the UK: 2022
[402] ONS. 2022. Population estimates for the UK, England, Wales, Scotland and Northern Ireland.
[403] Vape Shop. Vape Shop.(viewed on 26 January 2024)
[404] Jackson and others. 2023. How has Expenditure on Nicotine Products Changed in a Fast-Evolving Marketplace? A Representative Population Survey in England, 2018–2022.
[405] Action on Smoking and Health. 2023. Use of e-cigarettes among adults in Great Britain.

This is similar to other estimates we have found for the average cost of vape products. For example, another source suggests that the average price of a pack of vapes is £4.80[406].

618. Assuming a unit cost of £4 per vape, the total number of transactions would be around 340 million.

619. ONS' Annual Survey of Hours and Earnings (ASHE) provided a median hourly wage for retail assistants of £10.12. Adjusting this hourly wage for 2025 prices, and by 19% to account for non-wage labour costs, the estimated hourly wage for a retail assistant is £12.73.

620. Based on this data, Table 44 shows the indicative estimated cost to vape retailers in England and the UK of additional serving time up to 2034 following changes to vape point of sale display regulations. Future years costs are discounted at a rate of 3.5% in line with The Green Book.

Table 44: Cost of increase in transaction times due to regulating vape point of sale displays for vape retailers

	England	**United Kingdom**
2034	£22 million	£26 million

621. It is possible that this is an overestimate of the actual cost. The estimate for the number of transactions assumes that each person only ever buys one vape at a time. If it is the case that in some instances people purchase multiple vapes simultaneously, this would reduce the total number of vape transactions per year and reduce the cost of any increase in transaction times.

622. The size of this cost will also depend on the exact details of any regulations that are brought forward through secondary legislation. The indicative estimated cost above is more likely to be the cost if vapes are required to not be on display in shops at all, as retailers will need to open a storage unit to find the product the customer has asked for. If vapes need to be behind the counter but are still permitted to be on display, it is likely the cost to retailers will be lower than the indicative estimate above.

623. In addition, it also includes all shops that sell vapes. Ahead of introducing secondary legislation to regulate point of sale for vapes, there will be considerations on whether any types of shops that sell vapes should be excluded. The exclusion of any shops would lower the estimated additional transaction costs of this policy.

[406] The Grocer. 2022. Tobacco & vaping 2022: Disposable vapes drive stunning growth.

Increase in time for stock taking

624. If secondary legislation was introduced to regulate point of sale displays for vapes, it may take more time for retailers to assess stock for stock-taking, ordering stock, and restocking.

625. To estimate the cost of additional stock-taking time for retailers, we can multiply the additional stock-taking time by the estimated number of retailers that sell vapes, and by the average hourly wage of a sales assistant.

626. In the impact assessment for the prohibition of the display of tobacco products at the point of sale[407], it was estimated that the regulations would increase stock-taking time by 1 hour per week. The PIR for the tobacco point of sale display ban did not find any further evidence to suggest a different increase in stock-taking time. Therefore, we assume the same additional stock-taking time would be required for vapes.

627. As explained above, there are an estimated 49,751 retailers in England that sell vapes.

628. ONS' Annual Survey of Hours and Earnings (ASHE) provided a median hourly wage for retail assistants of £10.12. Adjusting this hourly wage for 2025 prices, and by 19% to account for non-wage labour costs, the estimated hourly wage for a retail assistant is £12.73.

629. A large amount of shops that sell vapes would already have storage units for tobacco products. Therefore, if vapes were in similar storage units, any regulations on point of sale displays for vapes would not mean it would take as much additional time for these retailers to assess stock for stock-taking, ordering stock, and restocking. For non-specialist and specialist retailers of food, beverages, and tobacco, it is assumed that only 50% of the increase in time for stock taking cost would apply. For specialist vape shops, 100% of the cost is assumed to apply.

630. Based on this data, Table 45 shows the indicative estimated cost to vape retailers in England and the UK of additional stock-taking time up to 2034, following the introduction of point of sale display regulations for vapes. Future years costs are discounted at a rate of 3.5% in line with The Green Book.

[407] DHSC. 2011. Impact Assessment on the Prohibition of Display of Tobacco Products at the Point of Sale in England.

Table 45: Cost of increase in stocking taking times due to regulating vape point of sale displays for vape retailers

	England	United Kingdom
2034	£154.8 million	£183.5 million

631. However, as with the cost of additional serving time, this cost will vary depending on the exact details of any regulations that are brought forward through secondary legislation. The indicative estimated cost above is more likely to be the cost if vapes are required to not be on display in shops at all, as retailers will need to open a storage unit to assess the stock they have. If vapes need to be behind the counter but are still permitted to be on display, it is likely the cost to retailers will be lower than the indicative estimate above.

Reduced profits for vape retailers, manufacturers, and wholesalers

632. The effect size illustrated that regulating vape point of sale displays in shops is expected to reduce the number of children and adults that vape. As a result, regulating vape point of sale displays is expected to reduce the profits for vape retailers, wholesalers, and manufacturers through reduced vape sales. In this section, we do provide indicative estimates for the loss in profits based on a reduction in sales among all people that currently vape in England. However, it should be noted that, given it is already illegal for ages 17 and under to purchase vapes, any profit retailers, manufacturers, and wholesalers currently gain from sales from ages 17 and under is also illegal.

633. The indicative estimates for the loss in profits is based on an estimated annual reduction in vaping prevalence of 0.04 percentage points, the same as the assumption for the reduction in adult smoking prevalence in the impact assessment for the prohibition of tobacco displays in shops.

634. Based on an average weekly spend of £6.30[408], yearly vape spend would be £327.60. Due to the large range of different products available, it is difficult to establish an average price for vape products. For example, e-liquids can cost as little as £0.99, while some vape kits can be over £50[409]. Given the estimate for the average weekly spend on vapes (£6.30), it appears people that vape purchase multiple vaping products per week. Based on online research, the most popular disposable vape among adults (Elf bar[410]) costs about £4. We assume this to be the average cost of a vape product.

635. Assuming a unit cost of £4 per vape, based on the estimated average weekly spend of vapes (£6.30), the total number of vapes purchased by each vaper is estimated to be around 82 per year.

[408] Jackson and others. 2023. How has Expenditure on Nicotine Products Changed in a Fast-Evolving Marketplace? A Representative Population Survey in England, 2018–2022.
[409] Vape Shop. Vape Shop. (viewed on 26 January 2024)
[410] Action on Smoking and Health. 2023. Use of e-cigarettes among adults in Great Britain

636. Based on ONS data, 8.4% of people aged 16 and older currently vape in England[411], and based on data from the Smoking, Drinking and Drugs use among Young People Survey 2021 (SDD), 8.6% of 11 to 15 year olds currently vape. This is equivalent to around 4.1 million people currently vaping in England[412]. Based on the estimate that each person purchases around 82 vapes per year, the estimated total number of vapes purchased in England each year is around 340 million.

637. Based on ONS and SDD data on vaping prevalence and population estimates, vaping prevalence for all aged 11 and older is around 8.4%. A 0.04 percentage point reduction in vaping prevalence would reduce the number of people that vape in England by around 20,000 each year. Multiplying this by the estimated number of vapes purchased by each person gives an estimated reduction in vapes purchased per year in England of around 90 million over the 10-year appraisal period.

Retailers

638. The Nicotine Inhaling Products age of sale IA estimated retailers' profit margins for vapes to be around 10% in the longer term, based on accounts from large retailers and industry reports of profit trends in the industry. As we have not been able to identify any updated estimate, we assume that retailers' profit margin for vapes is 10%. Based on the average unit price for a vape of £4, it is estimated that retailers' profit per vape is £0.36[413].

639. To provide an indicative estimate for the reduction in profit for vape retailers, we adjust the profit per vape for 2025 price and multiply it by the estimated reduction in vape sales. Future years costs are discounted at a rate of 3.5% in line with The Green Book[414].

640. Table 46 shows the indicative estimates for the reduction in profit for vape retailers in England and the UK up to 2034 (borne by all vape retailers over 10 years).

Table 46: Reduced profits from regulating vape point of sale displays for vape retailers

	England	**United Kingdom**
2034	£27.2 million	£32.3 million

641. 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.

Wholesalers

642. The Nicotine Inhaling Products age of sale IA estimated wholesalers' profit margins at around 3%, given that it is a low profit margin industry with a high degree of competition. As we have not been able to identify any updated estimate, we assume that

[411] ONS. 2023. Adult smoking habits in the UK: 2022
[412] ONS. 2022. Population estimates for the UK, England, Wales, Scotland and Northern Ireland.
[413] Calculated as the difference between the price, and the price divided by 1 plus the expected profit margin for retailers of 10%.
[414] HMT. 2022. The Green Book.

wholesalers' profit margin for vapes is 3%. Based on the average unit price for a vape of £4, it is estimated that wholesalers' profit per vape is £0.11[415].

643. To provide an indicative estimate for the reduction in profit for vape wholesalers, we adjust the profit per vape for 2025 price and multiply it by the estimated reduction in vape sales. Future years costs are discounted at a rate of 3.5% in line with The Green Book.

644. Table 47 shows the indicative estimates for the reduction in profit for vape wholesalers in England and the UK up to 2034 (borne by all vape retailers over 10 years).

Table 47: Reduced profits from regulating vape point of sale displays for vape wholesalers

	England	United Kingdom
2034	£7.9 million	£9.4 million

645. 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.

Manufacturers

646. The Nicotine Inhaling Products IA estimated manufacturers' profit margin at 11% in the longer term, based on accounts filed by two of the largest vape manufacturers. As we have not been able to identify any updated estimate, we assume that manufacturers' profit margin for vapes is 11%. Based on the average unit price for a vape of £4, it is estimated that manufacturers' profit per vape is £0.35[416].

647. To provide an indicative estimate for the reduction in profit for vape manufacturers, we adjust the profit per vape for 2025 price and multiply it by the estimated reduction in vape sales. Future years costs are discounted at a rate of 3.5% in line with The Green Book.

648. Table 48 shows the indicative estimates for the reduction in profit for vape manufacturers in England and the UK up to 2034 (borne by all vape retailers over 10 years).

Table 48: Reduced profits from regulating vape point of sale displays for vape manufacturers

	England	United Kingdom
2034	£26.2 million	£31.1 million

649. 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.

[415] Calculated as the price minus the profit per vape for retailers and the difference between the price, and the price divided by 1 plus the expected profit margin of 3%.
[416] Calculated as the price minus the profit per vape for retailers and wholesalers and the difference between the price, and the price divided by 1 plus the expected profit margin of 11%.

Enforcement costs

650. As the Bill only provides a regulation making power, there are no enforcement costs arising from this measure. It would be the responsibility of each local authority in England to enforce any regulations that are made using the powers conferred by the Bill to restrict vape flavours.

651. To help support the enforcement of new regulations, as well as tackle underage and illicit sales of tobacco products and vapes, an extra £30 million will be provided to enforcement agencies every year for the next five years. This adds to the work being carried out by Trading Standards and Operation Joseph to tackle underage sales and non-compliant products.

Specific impact tests

652. As explained above, when any of the vaping policies included within the Bill are brought forward through secondary legislation, a more detailed analysis of the finalised policies will be undertaken. This will also include a more detailed analysis of specific impacts, such as the Small and Micro Business Assessment (SaMBA), competition assessment justice system, trade, and the environment where appropriate.

653. At this stage we have provided an initial assessment of the wider impacts of the vaping policies.

Small and Micro Business Assessment (SaMBA)

654. For the purposes of this Small and Micro Business Assessment (SaMBA) we have assumed that no small and micro businesses would be exempted from any of the regulations. In practice, it may be the case that for some of the regulations, some businesses, which includes small and micro businesses, are exempted. For example, it may be appropriate to exempt specialist vape retailers from certain regulations on point of sale displays for vapes.

655. The consultation asked whether respondents thought that there should be exemptions for specialist vape shops. 48.5% of those who responded to this question said yes and thought that exemptions should be made for specialist vape shops. 46.1% said no, and 5.5% didn't know.

656. The only small and micro businesses we have considered in this SaMBA are retailers. Due to limited data and evidence, we are not aware of the proportion of vape wholesalers and manufacturers that are small and micro businesses, although we recognise that there may be some vape wholesalers and vape manufacturers that are small and micro businesses. Impact assessments for any secondary legislation for these policies would look to improve the SaMBA for vape retailers, wholesalers, and manufacturers.

657. For vape retailers, as explained above, we have estimated that there are 49,751 retailers in England that sell vapes, including 3,650 specialist vape retailers.

658. The ACS Local Shop Report 2023 put the number of convenience stores in mainland UK to be 49,388 in 2023[417], of which 70% are independent retailers (we assume all multiple operators are not small and micro businesses). As we do not have an estimate for the number of independent convenience stores specifically in England, we have assumed that the number scales with the relative size of the population in England compared to the whole of the UK. Based on population estimates from ONS[418], England accounts for around 84% of the UK population. Adjusting the number of independent convenience stores in England by this amount gives an estimated number of 29,161. It is assumed that these all sell vapes and are all small and micro businesses.

659. In addition, as we do not have data on the size of the businesses that are specialist vape retailers, we assume that all the estimated 3,079 specialist vape retailers in England are small and micro businesses. We recognise that this may be an overestimate as some of these are likely to be larger chains.

660. Based on these categories of stores, we estimate that there are 32,240 vape retailers in England that are small and micro businesses. This is around 65% of our estimate for the total number of vape retailers in England. We do not have specific data on the proportion of sales of vapes that are in small and micro retailers. We have instead assumed that small and micro retailers account for around 65% of the sales of vapes in England.

661. These proportions have been applied to our indicative estimates of the costs of these policies to provide indicative estimates for the costs of each of the vaping policies that could be incurred by small and micro businesses, specifically retailers.

662. On the basis of our current estimate that around 65% of vape retailers in England are small and micro businesses, the SaMBA for each of the vaping policies demonstrates we expect small and micro businesses to incur the majority of the costs on retailers.

663. As in the rest of the analysis of the vape policies, all our indicative estimates in this section are in 2025 prices to reflect our current assumption on when the policies may come into force, and any future year costs have been discounted at a rate of 3.5% in line with the Green Book[419].

Restricting vape flavours

664. The main costs that small and micro retailers would incur because of any restrictions to vape flavours are familiarisation costs, disposal costs, and reduced profits from fewer sales of vapes. As we have not been able to provide an indicative estimate for the disposal costs of the policy, we have not been able to provide an indicative estimate for the disposal costs to retailers that are small and micro businesses.

665. Table 50 below shows the indicative estimated cost to small and micro retailers based on the assumption that around 65% of vape retailers are small and micro businesses

[417] Association of Convenience Stores. 2023. The Local Shop Report 2023.
[418] ONS. 2022. Population estimates for the UK, England, Wales, Scotland and Northern Ireland–.
[419] HMT. 2022. The Green Book.

and the same proportion of vape sales in England and the UK are in these businesses. The costs are the total cost over the 10 year appraisal period and discounted at a rate of 3.5% in line with The Green Book.

Table 49: Small and Micro Business assessment for restricting vape flavours

	Indicative estimate for cost for small and micro retailers in England (£m)	Indicative estimate for cost for small and micro retailers in the UK (£m)	Average cost per store
Familiarisation costs	1.04	1.23	£32.29
Loss in profits	86.45	102.48	£2,681

666. We recognise that small and micro retailers may lose some income from reduced footfall-related sales. These are sales of non-vape products that people buy in addition to vape products. No data or evidence has been identified to quantify this potential impact.

Regulating vape packaging and product presentation

667. The main costs that small and micro retailers would incur because of any regulations to vape packaging and product presentation are familiarisation costs, disposal costs, increased transaction times, and reduced profits from fewer sales of vapes. As we have not been able to provide an indicative estimate for the disposal costs of the policy, we have not been able to provide an indicative estimate for the disposal costs to retailers that are small and micro businesses.

668. Table 50 below shows the indicative estimated cost to small and micro retailers based on the assumption that around 65% of vape retailers are small and micro businesses and the same proportion of vape sales in England and the UK are in these businesses. The costs are the total cost over the 10 year appraisal period and discounted at a rate of 3.5% in line with The Green Book.

Table 50: Small and micro business assessment for regulating vape packaging and product presentation

	Indicative estimate for cost for small and micro retailers in England (£m)	Indicative estimate for cost for small and micro retailers in the UK (£m)	Average cost per store
Familiarisation costs	0.23	0.27	£7.18
Transaction times	0.14	0.16	£4.28
Loss in profits	24.99	29.62	£775.07

669. We recognise that small and micro retailers may lose some income from reduced footfall-related sales. These are sales of non-vape products that people buy in addition to vape products. No data or evidence has been identified to quantify this potential impact.

Regulating vape point of sale displays

670. The main costs that small and micro retailers would incur because of any regulations to vape point of sale displays in shops are familiarisation costs, disposal costs, increased transaction times, costs of new storage, and reduced profits from fewer sales of vapes. As we have not been able to provide an indicative estimate for the disposal costs of the policy, we have not been able to provide an indicative estimate for the disposal costs to retailers that are small and micro businesses.

671. Table 51 below shows the indicative estimated cost for each of these costs to all retailers and the estimated cost to small and micro retailers, based on the assumption that round 87% of vape retailers are small and micro businesses and the same proportion of vape sales in England are in these businesses. The costs are the total cost over the 10 year appraisal period and discounted at a rate of 3.5% in line with The Green Book.

Table 51: Small and micro business assessment for regulating vape point of sale displays

	Indicative estimate for cost for small and micro retailers (£m) in England	Indicative estimate for cost for small and micro retailers (£m) in the UK	Average cost per store
Familiarisation costs	0.81	0.96	£25.12
Storage costs	14.03	16.64	£435.24
Transaction times	14.24	19.89	£441.81
Restocking costs	103.27	112.43	£3,203.04
Loss in profits	17.65	20.93	£547.55

672. We recognise that small and micro retailers may lose some income from reduced footfall-related sales. These are sales of non-vape products that people buy in addition to vape products. No data or evidence has been identified to quantify this potential impact.

Health and longevity impacts

673. Health and longevity impacts are discussed in the assessment of each of the vaping policies.

Equalities assessment

674. A separate equalities impact assessment will be completed in due course for these policies. At this stage we have provided an initial assessment of how these policies may affect different demographics.

675. There is limited data on how vaping prevalence varies between different demographics, particularly among young people.

676. Among young people, data from the Smoking, Drinking and Drugs use among Young People Survey 2021 (SDD)[420] and ASH on the use of vapes among young people in 2023[421] shows that vaping prevalence is higher among older children. For example, SDD shows that in 2021, 18% of 15 year olds were current vapes users, compared to just 1% of 11 year olds, 3% of 12 year olds, 6% of 13 year olds, and 11% of 14 year olds. This is also supported by data from ASH that shows in Great Britain in 2023, 15% of 16 to 17 year olds currently vape, compared to 4.6% of 11 to 15 year olds. Based on this data, we may expect these vaping policies to have a larger impact on older children.

677. The SDD data also shows vaping prevalence by gender, and in 2021, vaping prevalence was higher among girls. In 2021, 10% of girls aged 11 to 15 currently vape, compared to 7% of 11 to 15 year old boys. However, it should be noted that his was the first year since the data was collected in 2014 that it was higher among girls compared to boys.

678. For adults, based on ONS data[422], in 2022, vaping prevalence was highest among young adults and declined consistently among older age groups. In England, among 16 to 24 year olds, 15.4% currently vape, compared to 10.1% among 25 to 34 year olds, 9.5% among 35 to 49 year olds, 8.3% among 50 to 59 year olds, and 4.2% among people aged 60 and older.

679. The ONS data also shows that current vaping prevalence is higher among men at 9.2%, compared to 7.7% among women. However, vaping prevalence is higher among women that smoke. In England, in 2022, 27.5% of women that smoked also currently vape, compared to 25.7% of men that smoked. Given the assessments of the policies have shown that it may lead to fewer smokers using vapes to quit smoking, we may expect more women smokers to be impacted.

680. Data from the Smoking Toolkit Study[423] also provides data on vaping prevalence by socio-economic status and ethnicity for adults that smoke or stopped smoking in the past year. The data shows that in 2022, there was little difference in vaping prevalence between adults of different socio-economic status and ethnicity.

681. For socio-economic status, vaping prevalence was highest among people in group C1 (people in supervisory, clerical, and junior managerial, administrative, and professional occupations) at 29.7%, while it was lowest among people in group D (people in semi-skilled and unskilled manual occupations, unemployed, and lowest grade occupations) at 27.7%.

682. For ethnicity, vaping prevalence among adults that smoke or stopped smoking in the past year was highest among white people (29.1%), compared to ethnic minorities (28.4%).

[420] NHS Digital. 2022. Smoking, Drinking and Drug Use among Young People in England, 2021.
[421] Action on Smoking and Health. 2023. Use of e-cigarettes among young people in Great Britain.
[422] ONS. 2023. Adult smoking habits in the UK: 2022.
[423] University College London. Smoking Toolkit Study: E Cigarettes Latest Trends. (viewed on 26 January 2024)

683. As a result, it is uncertain if any of the impacts on adults that vape due to these policies would affect people in different socio-economic groups or of different ethnicities more than others.

Rural proofing

684. Data is not available on how vaping prevalence, including among young people, varies between rural and urban areas. However, we are not aware of any evidence to suggest the that these vaping policies would have a significant impact on people living in rural areas. The impact of these policies on rural areas will be considered further in the impact assessments for any secondary legislation for these policies.

Competition assessment

685. Using the Competition and Market Authority's (CMAs) competition assessment checklist[424], we have provided an initial assessment of the competition impacts of the vaping policies. A more detailed competition assessment will be included in impact assessments for any secondary legislation for the vaping policies.

686. The CMA competition assessment checklist asks does the proposal:

1. *Directly limit the number or range of suppliers?*

    - None of the vape policies directly limits the number of businesses that can operate in the market.

2. *Indirectly limit the number or range of suppliers?*

    - Restrictions on the flavours of vapes may mean that some manufacturers that specialise in particular flavoured vapes that become prohibited by this policy may have to leave the market. This would mean the policy indirectly limits the number of suppliers in the market.

    - Regulations of vape packaging and product presentation could increase the costs for existing manufacturers or raise them relative to manufacturers that already comply with any new regulations. If this is the case it may lead some businesses to exit the market, which would mean this policy indirectly limits the number of suppliers in the market. The extent to which this happens will depend on the exact restrictions that are put in place on vape packaging and product presentation.

    - Regulations of point of sale displays in shops for vapes could increase the costs for some retailers. For example, some retailers may be required to make significant changes to their shop layouts to comply with any new regulations. If this is the case, the cost may be too high for some retailers and cause them to exit the market. This would mean the policy indirectly limits the number of suppliers in the market. The extent to which this happens will depend on what any regulations on vape point of sales prohibit and whether they apply to all retailers or not.

3. *Limit the ability of suppliers to compete?*

[424] CMA. 2015. Competition assessment: guidelines for policymakers.

- Restrictions on the flavours of vapes would prevent vape manufacturers competing in terms of at least some flavours.

- Any regulations of vape packaging and product presentation may reduce vape manufacturers' ability to compete through packaging and brand differentiation. The extent to which this happens will depend on the exact restrictions that are put in place on vape packaging and product presentation. Manufacturers' ability to compete through packaging and brand differentiation will be most affected the more standardised vape packs and products are required to be. However, in the competition assessment in the impact assessment for standardised packaging of tobacco products[425], it highlighted that there was a chance that it may increase price competition, which may result in process innovation as companies improve the efficiency of the production process.

- Any regulations on point of sale displays in shops may limit retailers' ability to compete in terms of how they advertise products in their stores, and the ability of manufacturers to use point of sale displays to penetrate the market. Whether this policy does impact retailers' and manufacturers' ability to compete in terms of advertisement in stores will depend on what any regulations on vape point of sales prohibit and whether they apply to all retailers or not.

4. *Will the measure affect consumers' ability to engage with the market and make choices that align with their preferences?*

    - Restrictions on the flavours of vapes would affect consumers' ability to engage with the market and make choices that align with their preferences as it would prevent them from purchasing at least some flavours of vapes that they currently do.

    - Regulations of vape packaging and product presentation is not expected to affect consumers' ability to engage with the market and make choices that align with their preferences.

    - Regulations of point of sale displays in shops for vapes may have some impact on consumers' ability to engage with the market and make choices that align with their preferences as it may reduce the information they have available to them in stores when making a decision on which vape to purchase. The extent to which this happens will depend on what any regulations on vape point of sales prohibit and whether they apply to all retailers or not.

5. *Will the measure affect suppliers' ability and/or incentive to introduce new technologies, products, or business models?*

[425] DHSC. 2015. The Standardised Packaging of Tobacco Products Regulations.

- Restrictions on the flavours of vapes would affect vape manufacturers' ability to introduce new flavoured vapes into the market.

- Regulations of vape packaging and product presentation would affect manufacturers' ability to introduce new designs of products into the market.

- Regulations of point of sale displays in shops for vapes is not expected to affect suppliers' ability and/or incentive to introduce new technologies, products, or business models.

Environmental impact

687. The environmental impacts are discussed in the assessment of each of the vaping policies.

Human rights

688. We consider the proposals to regulate vape flavours, packaging, and presentation, and point of sale displays to be compatible with the European Convention on Human Rights.

Justice

689. A full justice impact assessment will be conducted in due course.

Other measures

690. The Bill will also:

- Prohibit the sale of non-nicotine vapes to under 18s[426] in England and Wales (and in the case of Northern Ireland, providing a power to do so),
- Prohibit the distribution of free samples of vaping and nicotine products to under 18s[20] in England and Wales (and in the case of Northern Ireland, providing a power to do so);
- Provide powers to extend the above two provisions to other nicotine products;
- Introduce powers in England and Wales for local weights and measures authorities to issue Fixed Penalty Notices (FPNs) to enforce tobacco and vaping product (nicotine and non-nicotine) offences.
- Provide powers to extend the notification, reporting and vigilance requirements in the Tobacco and Related Products Regulations 2016 (TRPR) to non-nicotine vaping products and nicotine products, including the associated fee requirements.

691. The powers to prohibit the sale of non-nicotine vapes to under 18s and the distribution of free sample vapes to under 18s will apply to England and Wales and include a power for Northern Ireland to implement via secondary legislation. The power that will allow local authorities to issue Fixed Penalty Notices (FPNs) to enforce age of sale legislation for tobacco products, vapes and other consumer nicotine products will only apply to England and Wales.

692. We expect that these policies will have limited impacts, particularly on businesses. Given this, we have provided a proportionate assessment of the potential impact of these policies and demonstrated why we do not expect them to have a significant impact on businesses.

Prohibit the sale of non-nicotine vapes to under 18s

Background

693. There are three broad categories of non-nicotine vapes[427] on both the England and UK markets:

- **Short-fill non-nicotine vape liquid:** These are usually sold in a 50ml bottle with 40ml of non-nicotine liquid, with a gap left (usually 10ml) to allow a nicotine vape liquid (often known as nicotine shots) to be added and mixed. Long-fills are sold in bigger bottles, usually 60ml, filled with 20ml of 50VG/50PG flavour. You can add more nicotine shots

[426] Already encompassed in Scotland by the Tobacco and Primary Medical Services (Scotland) Act 2010.
[427] Non-nicotine vapes often known internationally as Electronic Non-Nicotine Delivery Systems (ENNDS)

to these bottles. Both Short and long fills are used with open vape devices. They are sold in shops or online.

- **Disposable (single use) non-nicotine vapes:** These are used through a closed device, and unlike nicotine containing vapes, there is no requirement to have a maximum 2ml tank size for these devices. They are often produced by the same suppliers of nicotine vapes, and displayed alongside nicotine vapes in retail outlets or online. Some online marketplaces such as Amazon UK and eBay UK sell non-nicotine vapes (and include age restrictions to 18), but they do not sell nicotine vapes.
- **Alternative non-nicotine vapes:** Some vapes are being advertised as wellness products, for example by stating they contain vitamins, or help people relax and/or sleep. If these products make medicinal claims, they would be regulated as medicinal products. Alternative non-nicotine vapes are either sold closed or to be used with open devices. They are sold in shops and online, although it would appear that vitamin vapes are mainly available online rather than in retail outlets.

694. Non-nicotine vapes are covered by the General Products Safety Regulations (GPSR) 2005. The GPSR require providers to ensure only safe products are placed on the market together with any necessary warnings for safe use of the product. The Regulations contain powers to secure compliance and enforcement.

695. There are currently no age of sale restrictions for non-nicotine vapes in England - only for nicotine vapes that were introduced in The Nicotine Inhaling Products (Age of Sale and Proxy Purchasing) Regulations 2015[428]. Internationally, 30 countries have banned non-nicotine vapes for sale, and another 50 countries allow them to be sold, but with age restrictions, including Scotland.

696. The consultation asked respondents whether they thought that non-nicotine vapes should be regulated under a similar regulatory framework as nicotine vapes. 59.6% of those who responded to this question said yes and thought that the UK Government and devolved administrations should regulate non-nicotine vapes under a similar regulatory framework as nicotine vapes. 32.7% said no, and 7.8% did not know.

Rationale for intervention

697. There is well established concern about the harms from vaping, specifically associated with younger people.

698. Non-nicotine vapes do not have the addictive impact of nicotine vapes. However, in a statement by the Committee on Toxicity in July 2020 on the toxicological risks of nicotine and non-nicotine regulated vapes[429] it said:

"*There is very little data for products that do not contain nicotine, but they can play a role in smoking cessation - if produced to manufactured standards*. *It is likely there will be reduction in overall risk of adverse health effects compared to if a smoker continued to smoke*. *We do not know the long term harms of use as this data does not exist. For*

[428] The Nicotine Inhaling Products (Age of Sale and Proxy Purchasing) Regulations 2015.
[429] Committee on Toxicity of Chemicals in Food, Consumer Products and the Environment. Statement on the potential toxicological risks from electronic nicotine (and non-nicotine) delivery systems (E(N)NDS - e-cigarettes).

non-smokers it is not recommended they are used as there are likely to be associated with some adverse effects to which the user would not otherwise have been subject to."

699. There is also limited evidence on the public health benefits from the use of non-nicotine vapes. In 2022, the Cochrane review[430] looked at the use of nicotine and non-nicotine vapes to help smokers quit smoking. Non-nicotine vapes were found to be not as effective to help smokers quit as nicotine ones - it states that 7 in 100 quitters succeeded with a zero nicotine vape plus behavioural support, compared to 4 in 100 with behavioural support alone. With nicotine vapes it was 8 in 100 for early vaping products, increasing to 12 in 100 for more recent studies. Nicotine Replacement Therapy (NRT) plus behavioural support yields around 6 in 100.

700. Although the majority of vapes sold contain nicotine, there is emerging data of children using non-nicotine vapes in England. In 2023, a review published by Taylor and others[431] reported that, in England, awareness of short fill vapes was common among young people (aged 16 to 19) including among those who had never vaped or smoked. Among young people who vaped in the past 30 days, short-fill use was more prevalent among those who also smoked and those who vaped nicotine-containing e-liquids. Data from ASH found that 9.5% of current vapers aged 11 to 17 in Great Britain said that the e-cigarette they used most often never contained nicotine[432].

701. In addition, there is some evidence that non-nicotine vapes are being sold as nicotine free, when they have subsequently been tested and found to contain nicotine as high as full strength nicotine vapes[433]. This is illegal and means nicotine containing vapes could be being sold to children. A recent case in Middlesbrough highlights a temporary closure of a shop selling non nicotine vapes (which contained nicotine)[434].

702. Given the emerging data on the use of non-nicotine vapes by young people, the government wishes to protect children from vaping, due to the unknown long-term harms and the risks they may pose on young people. As a result, The Bill will prohibit the sale of non-nicotine vapes to under 18s.

703. Setting the age of sale for non-nicotine vapes to 18 was also a suggestion by some UK vaping industry and other stakeholders in response to the consultation for the post implementation review of TRPR[435] in 2022.

Impact

704. There is very little information publicly available on the market share of non-nicotine vapes. However, data provided by Nielsen shows that the total coverage of zero-nicotine in Great Britain in the 26 weeks up to 1 July 2023 in supermarkets and convenience stores showed sales of £575k. This data does not include dedicated vape shops or online, where according to IBVTA, most of the short-fill non-nicotine vapes are

[430] Hartmann-Boyce and others. 2022. Electronic cigarettes for smoking cessation.
[431] Taylor and others. 2023. Awareness and use of short-fill e-liquids by youth in England in 2021: findings from the ITC Youth Tobacco and Vaping Survey.
[432] Action on Smoking and Health. 2023. Use of e-cigarettes among young people in Great Britain.
[433] The Guardian. 2023. Some 'nicotine-free' vapes high in addictive substances, tests reveal.
[434] Talking Retail. 2023. Middlesbrough store shut down and owner fined over illegal vape sales.
[435] OHID. 2022. The Tobacco and Related Products Regulations 2016: post-implementation review.

sold. In comparison, the nicotine vapes and vaporizers UK market is valued at 3.67billion USD[436] (according to Statista.com).

705. Although this does not include dedicated vape shop or online sales of non-nicotine vapes, it demonstrates that it is a relatively small market, and any reduction in sales of these products by ages 17 and under as a result of this policy is likely to have a limited impact on vape retailers, wholesalers, and manufacturers' profits.

706. We recognise that there may be some additional transition costs for retailers to familiarise themselves with the new age restriction for non-nicotine vapes to and check people's IDs.

707. The UK vape industry, for example the Independent British Vape Trade Association (IBVTA), have it in their Code of Conduct for its members to not sell any type of vape to ages 17 and under. Some online retailers such as Amazon UK[437] and eBay UK[438] have also voluntarily introduced an age of sale of 18 and have their own age verification procedures in place.

708. This policy would align the legal age of sale for non-nicotine vapes with a number of other age restricted products, including nicotine vapes. Therefore, any retailers that do currently sell non-nicotine vapes to under 18s would not be expected to have to spend becoming familiar with the new rules. Also, they are unlikely to have to significantly increase the number of people's IDs they have to check as they should already be checking them for most sales of vapes.

709. While it is encouraging to see many retailers apply age restrictions on non-nicotine vapes, we need to ensure there is consistency across the sector, and that our rules are keeping pace with the increases in youth vaping more generally. This Bill will introduce age of sale restrictions for non-nicotine vapes, and we expect this policy to impose negligible additional costs on businesses in England.

Prohibiting the distribution of free samples of vapes to under 18s

Background

710. The sale of nicotine inhaling products to persons under 18 is banned. There is, however, no restriction on the free distribution of such products or non-nicotine vapes. This differs to the position on tobacco products, as the free distribution of tobacco products is banned under section 9 of the Tobacco Advertising and Promotion Act 2002.

711. The Prime Minister at the end of May 2023[439] agreed to close this loophole through introducing legislation. Scotland currently have powers to introduce such regulations and intend to do so soon.

[436] Statista. 2023. E-cigarettes and vaping in the United Kingdom - statistics & facts.
[437] Amazon. Age Restricted Items. (viewed 26 January 2024)
[438] Ebay. Tobacco and e-cigarettes policy. (viewed 26 January 2024)
[439] DHSC. 2023. No more free vapes for kids.

Rationale for intervention

712. Data from Action on Smoking and Health (ASH) in 2023 showed that 2.1% of 11 to 15 year olds in Great Britain who have ever tried vaping said they were given it free by a vape company[440]. ASH stated that there are wide confidence intervals, so this could range from between 9,000 and 38,000 children.

713. If no action is taken, suppliers and retailers would still be able to give out free samples of nicotine and non-nicotine products such as vapes to children.

714. Introducing this legislation will help protect children from the marketing and risk of harm from vaping and protect future generations from nicotine addiction. It will introduce extra protection against irresponsible retailers already targeting children through the current loophole in legislation.

Impact

715. We do not believe there will be impact on business as they are already claiming to self-regulate on this matter to only target smokers who are aged 18 and over. The proposed legislation will ensure those rules are understood and adapted universally to protect children and future generations from the harms of vaping.

716. There may be new burdens on local Trading Standards to enforce this new measure which will be assessed ahead of any future regulations.

Introducing Fixed Penalty Notices *(FPNs)* for underage tobacco and vape sales

Background

717. Complaints about underage sales of vapes are one of the main areas of concern raised to Trading Standards from the public. Previously, the Department of Health and Social Care (DHSC) has provided funding for yearly surveys carried out by the Chartered Trading Standards Institute (CTSI) to oversee the adherence to The Tobacco and Related Products Regulations 2016 and The Nicotine Inhaling Products (Age of Sale and Proxy Purchasing) Regulations 2015 on vaping products[441]. These surveys were voluntary, but CTSI received a substantial response rate from local Trading Standards. During the 2019/20 period, 66% of all councils engaged in activities related to tackling underage sales of vapes. This marked an 11% rise from the results observed in the 2018/19 period. However, a recent programme of test purchasing by the Chartered Trading Standards Institute, using ages 17 and under, found that 33% of retailers sold the vaping product to the underage test purchaser[442].

718. Local authorities take a proportionate approach to enforce age of sale and proxy purchasing restrictions on tobacco products and vapes, that reflects the level of offence committed. For example, in England, penalties can be escalated, starting with a warning, through to a maximum fine of £2,500. In the case of the most serious or repeat

[440] Action on Smoking and Health. 2023. Use of e-cigarettes among young people in Great Britain.
[441] Chartered Trading Standards Institute. Tobacco Control Survey.
[442] The Grocer. 2023. Third of vape products sold in UK not compliant, claims Trading Standards.

offences, local authorities can apply for a court order to prevent the offending retailer from opening for a period of time.

719. The current penalty regime requires local authorities to prosecute the individual or business in question, and for the individual or business in question to be convicted in a magistrates' court. Trading standards officers say this is a time-consuming court procedure that limits their ability to issue fines and is a significant gap in their operational capabilities.

720. As committed by the Prime Minister in May 2023, the government has undertaken a review of fixed penalty notices (FPNs) to enforce age of sale legislation for vaping products. FPNs are a well-established approach to enforce a range of regulatory offences, and penalty charge notices (a type of FPN) are already used as part of a suite of measures to enforce age of sale restrictions for alcohol. The review concluded that introducing an FPN (an on-the-spot fine) will enable Trading Standards officers to take more swift and proportionate enforcement action against the irresponsible retailers who allow underage sales of vapes. It was welcomed by many Trading Standards officers. The government thinks that these findings also support introducing powers to enforce age of sale legislation for tobacco products.

721. FPNs are already used to enforce age of sale legislation for tobacco products and vapes; Scotland has introduced an FPN of £200, and Northern Ireland an FPN of £250.

722. The consultation asked respondents whether they thought that FPNs should be issued for breaches of age of sale legislation for tobacco products and vapes. 88.3% of respondents to this question were in support of issuing FPNs, 8.8% were not in support, and 2.8% did not know.

Rationale for intervention

723. Following consultation, the government has decided to introduce an FPN of £100 to enforce age of sale legislation for tobacco products, vapes, and other consumer nicotine products in England (FPNs are already in place through existing legislation for proxy purchases). Powers to issue FPNs to the individual or business in question would be in addition to existing powers local authorities have to enforce age of sale legislation and will support the enforcement of the new age of sale for tobacco products outlined in the Bill. FPNs will enable local authorities to take more swift and proportionate enforcement action in cases of underage sales of tobacco products, vapes, and other consumer nicotine products.

Impact

724. The current penalty regime requires local authorities to prosecute the individual or business in question, and for the individual or business in question to be convicted in a magistrates' court. This is a costly and time-consuming process for local authorities; permitting local authorities to issue on the spot fines is unlikely to be considered a new burden and may save local authorities, retailers, and the justice system time and money.

725. The ability to issue FPNs to enforce age of sale legislation may lead to an increase in fines issued as the current, resource intensive route to issue a fine following prosecution in a magistrates' court is dissuading local authorities from taking forward cases of underage sales. However, penalties that are brought forward would be administered in a less resource intensive and more efficient way.

726. The impact on business should be minimal as they should already be complying with the law and checking individual ages. It is the responsibility of retailers to ensure they do not sell age restricted products to people under the minimum age.

727. A new burdens assessment will be completed to assess costs to local authorities ahead of the Bill being introduced.

Powers to amend the current vape notification scheme

728. The bill will:

729. Introduce powers for non-nicotine vapes and nicotine products to be notified under a similar notification system as nicotine vapes. This will mean producers and manufacturers must notify their product to the Secretary of State to supply their product on the UK market. Producers will be required to submit certain information about their product, such as nicotine content, or toxicology data, that will be assessed by the MHRA on behalf of the Secretary of State. The MHRA will assess that the notification meets the requirements set by the regulations for a valid notification, and if correct, will publish the notification and the product can be made available for sale.

Background

730. To supply a nicotine vape on the UK market you must first notify your product. The Medicines and Healthcare Products Regulatory Agency (MHRA) runs the notification scheme for nicotine containing vapes (and refill containers) in Great Britain and Northern Ireland.

731. The MHRA are responsible for assessing that the notification of nicotine containing vapes meets certain requirements set out by the Tobacco and Related Product Regulations (TRPR) (Part 6).

Rationale for Intervention

732. To support a compliant market, it is important that the existing notification system is able to align with future requirements and restrictions to vapes and other nicotine products. This will help to ensure legitimate products are available for sale. Industry and enforcement agencies have asked government to update the system, and although it was not part of the consultation process, subsequent consultation will be required to better inform its implementation.

733. The Government would like to make sure that non-nicotine vapes and other consumer nicotine products being sold on the UK market are subject to the similar notification requirements as nicotine vapes. This is in line with the smokefree generation

consultation, where the majority of responses were in favour of regulating all non-nicotine vapes and other nicotine products under a similar regulatory framework[443] as nicotine vapes.

734. To ensure that the notification system can be updated to account for any changes that result from the introduction of vaping legislation, it is necessary that government has the power to amend the current data requirements for notification.

Impact

735. There will be some costs to industry due to measures including product notification requirements for non-nicotine vapes and other nicotine products and the potential for increased data requirements for all notifications.

736. The requirements for product notifications on non-nicotine vapes and other nicotine products may also put off producers with lower standards and therefore may improve the general safety standards of the industry. The notification requirements will also mean consumers can access more information on non-nicotine vapes and other nicotine products.

737. There may be a cost to companies who have to request information from their suppliers and gather existing data on non-nicotine vapes and other nicotine products. Companies will also have to spend resource filling in the form. Based on the impact assessment for the Tobacco and Related Products Regulations we expect these tasks to take between 10-15 hours per notification[444]. There may also be costs of translating information to submit a notification, however given that all companies notifying the UK will be selling to or operating in the UK, we expect these costs to be negligible.

738. There is currently a small fee of £150 to notify a nicotine containing vape product. A new fee will be imposed to notify non-nicotine vape products and other consumer nicotine products, with the amount to be determined through further consultation, however, it is likely to be small, and is not likely to exceed £150. Whilst the market share of these products is small in comparison to nicotine vapes, many manufacturers of these products are predominantly vape or tobacco businesses.

739. For potential new information requirements there may be additional costs associated with acquiring this. Some manufacturers may already collect any new information. In this case, there will be no additional costs of acquiring the information and the only additional cost will be staff time spent collating and submitting information. These costs may be more burdensome for smaller companies.

[443] DHSC, Department of Health (Northern Ireland), Scottish Government, Welsh Government. 2024. Creating a smokefree generation and tackling youth vaping: government response.
[444] DH. 2016. The Tobacco and Related Products Regulations 2016 - Impact Assessment.

740. These changes will be achieved through secondary legislation which will be subject to consultation to determine what information should be notified, the process for any non-publication of notifications and the level of fees for non-nicotine vapes and other nicotine products. We will also be giving industry enough time for businesses to make any necessary changes before future regulations come into force.

Monitoring and Evaluation

741. The specifics of the evaluation of the measures in the Bill are still being developed. Additionally, any regulations that are implemented in England using powers created by the Bill will be subject to review after 5 years, in the form of a post implementation review in the usual way. Other devolved nations will consider their own arrangements.

742. The review period for the measures in the Bill will be taken from the point when they come into force. For the smokefree generation policy, the measures will come into force on 1 January 2027. The review period for measures to regulate vaping that are implemented using powers created by the Bill will depend on when any subsequent secondary legislation is implemented.

743. The impact of the policies can be monitored through a range of publicly available data sources. These data sources will be used to assess whether the original objectives have been met, and whether the interventions should be amended.

744. The Smoking, Drinking and Drugs use among Young People Survey (SDD)[445] shows smoking and vaping prevalence for 11 to 15 year olds. This survey is currently conducted every two years.

745. The SDD data also provides information on the sources of cigarettes and vapes among this age group. This data could be used to assess whether the smokefree generation and vaping policies have led to a reduction in smoking and vaping prevalence, and changed how children access these products.

746. The SDD data also provides information on awareness of vapes, which could be used to monitor if the vaping policies have been effective at reducing promotion of vapes to children.

747. ASH also currently conduct an annual survey on youth vaping. This survey contains data on the vaping prevalence among 11 to 17 year olds, and information on sources of vapes, awareness of vapes, and reasons for vaping. Given this is currently an annual survey, this could be used to provide more regular monitoring of the impact of the vaping policies.

748. For the smokefree generation policy, there is also ONS' Adult Smoking habits in the UK[446], which provides smoking prevalence data for adults aged 18 and over, split by age, gender, location, socio-economic status, and other demographics. This could also be used to monitor the impact that the smokefree generation policy has on smoking behaviours among older age groups as the legal age of sale increases.

[445] NHS Digital. 2022. Smoking, Drinking and Drug Use among Young People in England.
[446] ONS. 2023. Adult smoking habits in the UK: 2022.

749. The Department will also consider commissioning independent research into the impact of any implemented policy, as previously done for the Tobacco Advertising and Promotion (Display) Regulations, Standardised Packaging of Tobacco Regulations, and the Tobacco and Related Products Regulations.

750. The main aim of commissioning any independent research would be to understand what impacts can be attributed to specific policies. For example, research commissioned to evaluate the impact of the smokefree generation policy would aim to understand what changes in metrics, such as smoking prevalence, and smoking related deaths and disease, can be attributed to the smokefree generation policy and not external factors.

751. For the vaping policies, more detailed monitoring and evaluation plans will be set out in impact assessments for any secondary legislation.

Annex A – Modelling paper

752. This annex explains the methodology and data used for the Markov model that we constructed to model the effects of the smokefree generation policy for the impact assessment.

753. The modelling is for England only and focuses on the 14 to 30 age group, given the primary aim is to further reduce the number of young people taking up smoking (the 'instigation rate').

754. To assess the longer-term impacts on disease incidence, we have modelled the lifetime effects of changes in the instigation rate on disease incidence, mortality, and costs, taking into account subsequent smoking behaviours (quitting and relapse).

755. In developing the model, we have made assumptions based on the best evidence available which influence the results. Also, while a Markov model is a widely used approach for considering smoking behaviour, there is inherent uncertainty in projecting analysis decades into the future. These factors mean that this work should not be considered a precise forecast, but rather an attempt to assess the scale of potential effect. There is further information about the limitations of the model later in this annex.

Model Structure

756. The York Health Economics Consortium (YHEC) defines the Markov model as follows:

'The Markov model is an analytical framework that is frequently used in decision analysis, and is probably the most common type of model used in economic evaluation of healthcare interventions. Markov models use disease states to represent all possible consequences of an intervention of interest. These are mutually exclusive and exhaustive and so each individual represented in the model can be in one and only one of these disease states at any given time. … Time itself is considered as discrete time periods called 'cycles' (typically a certain number of weeks or months), and movements from one disease state to another (in the subsequent time period) are represented as 'transition probabilities.[447]

757. Figure 14 is a diagram of our Markov model structure. It divides the population (aged 13 to 89) into four states, based on smoking status[448]:

- non-smokers
- current smokers
- former smokers
- people who are dead

[447] York Health Economics Consortium. 2016. Markov Model.
[448] Despite typically being referred to as 'disease states' in health economics, these do not have to correspond to diseases.

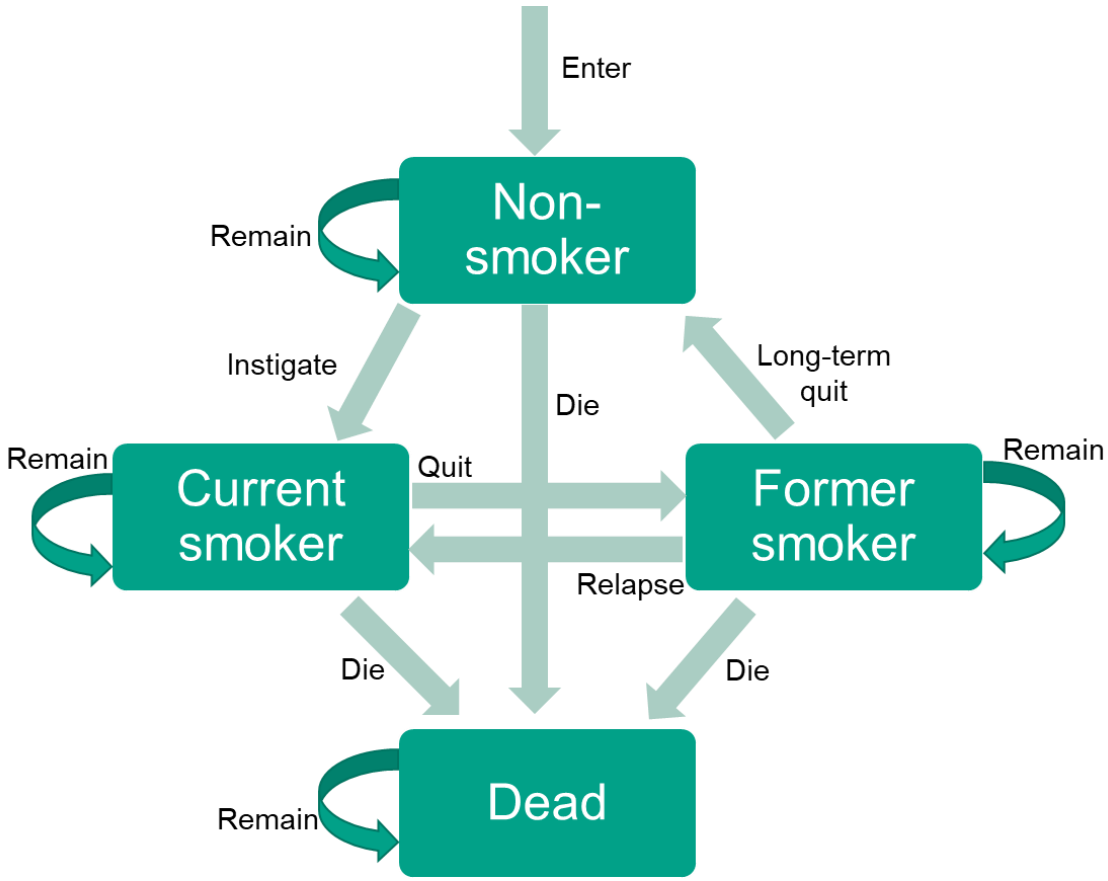
758. Each cycle of the model is one year, and individuals can either remain in one of the above states or move to another at each cycle.

759. People enter the model as non-smokers. If a non-smoker starts smoking, this is known as instigation. Current smokers who quit become former smokers, and if they remain abstinent, they eventually move back to being non-smokers (called ‘long-term quitting’ in the model). Former smokers can also relapse. In the model, people die from:

- Smoking-related causes (from current smoking or a history of smoking)
- Other causes, not related to smoking

760. The model runs from 2023 up to 2100, to assess the long-term impacts on disease incidence, mortality, and costs, acknowledging there is greater uncertainty the further into the future the analysis projects.

Figure 14: Tobacco Markov model structure



Transitions

761. Each year, a new set of 13-year-olds enters the model as non-smokers. As a simplification, and given the small numbers of ages 13 and under who smoke, after the initial starting population the model assumes no 13-year-olds smoke. The number of 13-year-olds in England each year is sourced from ONS.[449]

762. We have applied an average of figures over the time period 2026 (the year before the introduction of the policy) to 2050 each year, rather than modelling each year separately. We thought this was reasonable as year-on-year changes are small. Therefore, each year, 333,573 males and 316,014 females enter the model at 13.

763. Each year, people from any state (non-, current, or former smokers) can die, although the probability of dying (by age and sex) is different for each state. We have taken baseline mortality rates from UK National Life Tables, 2017 to 2019 (to avoid the impacts of Covid-19)[450]. We then disaggregated this based on the proportion of smokers who are current, former, and never smokers, and combined with increased relative risks of mortality based on data from Doll (2004)[451]. We split data on mortality risks for former smokers by the age of quitting. However, we took an average of these figures for the purposes of this model.

764. Aside from mortality probabilities, each year non-smokers can either instigate smoking (up to the age of 30) and transition to the current smoker state or remain in their existing state. Current smokers can either quit smoking and transition to the former smoker state or remain in their existing state. Former smokers can relapse (returning to being current smokers), remain in their current state, or 'long-term quit,' which means they move back to being a 'non-smoker,' as outlined below.

765. Baseline transition probabilities for instigation (becoming a smoker), quit (successfully quitting smoking for one year), and relapse (becoming a smoker again after having quit) are taken from the University of Sheffield's Tobacco Policy Model.[452] University of Sheffield provide data by deprivation quintile. This was converted to an overall figure by calculating a weighted average using the population of smokers in each deprivation decile (from the OHID Fingertips tool[453]) and assuming each decile had an equal population size.

766. For the baseline analysis, we have held instigation, quit, and relapse rates constant at 2023 values. University of Sheffield projected rates changing over time, and we have included a scenario in sensitivity analysis using variable rates (where trends continue until 2040, and then 2040 values are used up to 2100). However, these predicted changes assume some further policy action on smoking. Without this, it is unclear how instigation, quit, and relapse rates would change. While smoking overall has been declining in recent years, it is plausible that without action smoking rates could stall or

[449] ONS. 2023. 2020-based interim national population projections: year ending June 2022 estimated international migration variant.
[450] ONS. 2024. National life tables: UK.
[451] Doll and others. 2004. Mortality in relation to smoking: 50 years' observations on male British doctors.
[452] Sheffield Tobacco and Alcohol Policy Modelling. Smoking state transition probabilities. (viewed on 31 October 2023)
[453] OHID. Local Tobacco Control Profiles. (viewed on 26 January 2024)

even rise, as seen in Australia[454] and in New York in the USA[455]. So, we assume that instigation, quit, and relapse rates remain constant at 2023 values. This results in baseline trends over the coming years that are broadly in line with other estimates from Cancer Research UK's Smoking prevalence projections for England, based on data to 2021[456], and University of Sheffield's projections from 2021, published in the Royal College of Physicians report 'Smoking and health 2021: a coming of age for tobacco control?[457].' The trends then reach a long-run steady state of smoking prevalence that is lower than current levels of smoking (once the starting population has aged out of the model).

767. Using University of Sheffield's data, instigation, quit, and relapse rates were available from the age of 16 (at the time of constructing this model). For our analysis, we also calculated instigation rates for 13 to 15 year olds. We did this by taking instigation rates for 14 to 16 year olds from the US SimSmoke model (available to download from the US National Cancer Institute Publication Support and Modelling Resources website)[458], and using these to adjust the Sheffield rates, by assuming the ratio between age groups in the US model applies to our population. For example, SimSmoke suggests 2.4% of 15 year old male non-smokers instigate, and 3.1% of 16 year old males instigate. We then divided the Sheffield 16 year old male instigation rate by 2.4, and divided by 3.1 to calculate a 15 year old male instigation rate. For 13 year olds, we assumed rates were equal to 14 year olds, as outlined below. We applied long-term quit probabilities (described below) from the age of 24, as they are only relevant for individuals who quit smoking more than 10 years ago. Each cycle in the model lasts one year, so transitions between states can only occur 'between' ages. For example, a 17 year old non-smoker who instigates smoking becomes an 18 year old smoker. The model uses rates for a given age to calculate transitions at the end of that year, for example the 17 year old instigation rate is used to calculate those moving to the current smoking state at age 18. When rates are modelled to change over time, the year of the rate used is the year to which it is applied. For example, for a 17 year old becoming a smoker at age 18 in 2030, the 2030 instigation rate is used.

768. Given the above, when calculating instigation rates for 13 year olds, we assumed this would be equal to the rate for 14 year olds. Although we know considerably fewer 13 year olds smoke than 14 year olds smoke, the model applies this number to next year's 14 year olds and assumes no-one aged 13 or below smokes.

[454] The Guardian. 2023. Australia's teenage smoking rates rise for first time in 25 years, research reveals.
[455] The Wall Street Journal. 2014. New York City's Adult Smoking Rate Climbs.
[456] Cancer Research UK. 2022. Smoking prevalence projections for England based on data to 2021.
[457] Royal College of Physicians. 2021. Smoking and health 2021: A coming of age for tobacco control?
[458] National Cancer Institute. CISNET. (viewed on 26 January 2024)

769. The ‘former smokers’ state is intended to capture only those who quit smoking less than 10 years ago. A modelling study on risks and mortality (Kontis and others)[459] shows that 10 years after smoking cessation, the excess risk of cancers and chronic obstructive pulmonary disease (COPD) is less than half that of a smoker, and for cardiovascular diseases, is close to zero. Research on long-term smoking relapse (Hawkins and others)[460] suggests relapse is negligible after 10 years of abstinence, so the model applies a probability called ‘long-term quit’ to approximate the proportion of those who quit smoking less than 10 years ago who have reached 10 years of abstinence. The model moves these people to the ‘non-smoker’ state, assuming they have the same health risks as never smokers.

770. This is a simplification that will underestimate the health consequences of having been a smoker, so will underestimate the effect of the policy to some extent. While the highest relative health risks are in those who quit smoking more recently, analysis of lung cancer, stroke, coronary heart disease (CHD), and COPD incidence data from the Global Burden of Disease study shows that the main health conditions that can be caused by smoking tend to accrue more in older age. Analysis of the Health Survey for England 2019 data provided by the University of Sheffield shows that most older former smokers quit more than 10 years ago.

771. The long-term quit probability is 8.96%, calculated from previous internal analysis simulating a cohort, and using Hawkins and others. It also uses probabilities of relapse to assess the probability of having remained abstinent for 10 years from a given set of former smokers who quit up to 10 years ago. This analysis assumed a constant number of quitters each year and calculated their relapse and mortality risks each year. Then it calculated at the end of 10 years the probability that a randomly sampled person who had quit in one of the last 10 years, and had remained abstinent, would be one who had quit over 10 years ago. This is slightly less than 10%, given a pool of ‘non-relapsers’ will skew more towards more recent quitters but is not significantly less as relapse becomes progressively less likely with time since quitting.

[459] Kontis and others. 2014. Contribution of six risk factors to achieving the 25×25 non-communicable disease mortality reduction target: a modelling study.
[460] Hawkins and others. 2010. Long-Term Smoking Relapse: A Study Using the British Household Panel Survey.

Starting population

772. The model starts in 2023. For the first year, a starting population (by age and sex from 13 to 89) is assigned to each state. This is based on:

- ONS mid-population estimates from 2021 for the English population[461]
- ONS data on adult smoking habits to determine current and former smokers who are 18+[462]
- data from University College London (UCL)[463] to determine current and former smokers aged 16 to 18
- NHS Digital[464], to determine current and former smokers under 16[465]

773. The last 2 data sources are from 2021 and 2022, and we have used these to approximate the 2023 population, which may lead to slight inaccuracies.

774. An adjustment is then made to these data, reflecting the model's approach to former smokers, discussed above. Figures provided by the University of Sheffield based on Health Survey for England 2019 data on the proportion of former smokers who have quit within the last 10 years by age and sex are applied to calculate the number of former smokers who have quit within the last 10 years. The remainder of former smokers are assigned to the non-smoker state in the model.

775. Running the model from the components described above, we are able to estimate the numbers of people by smoking status, by age, and sex per year as well as the number of deaths. This provides a baseline, which we can compare an intervention to.

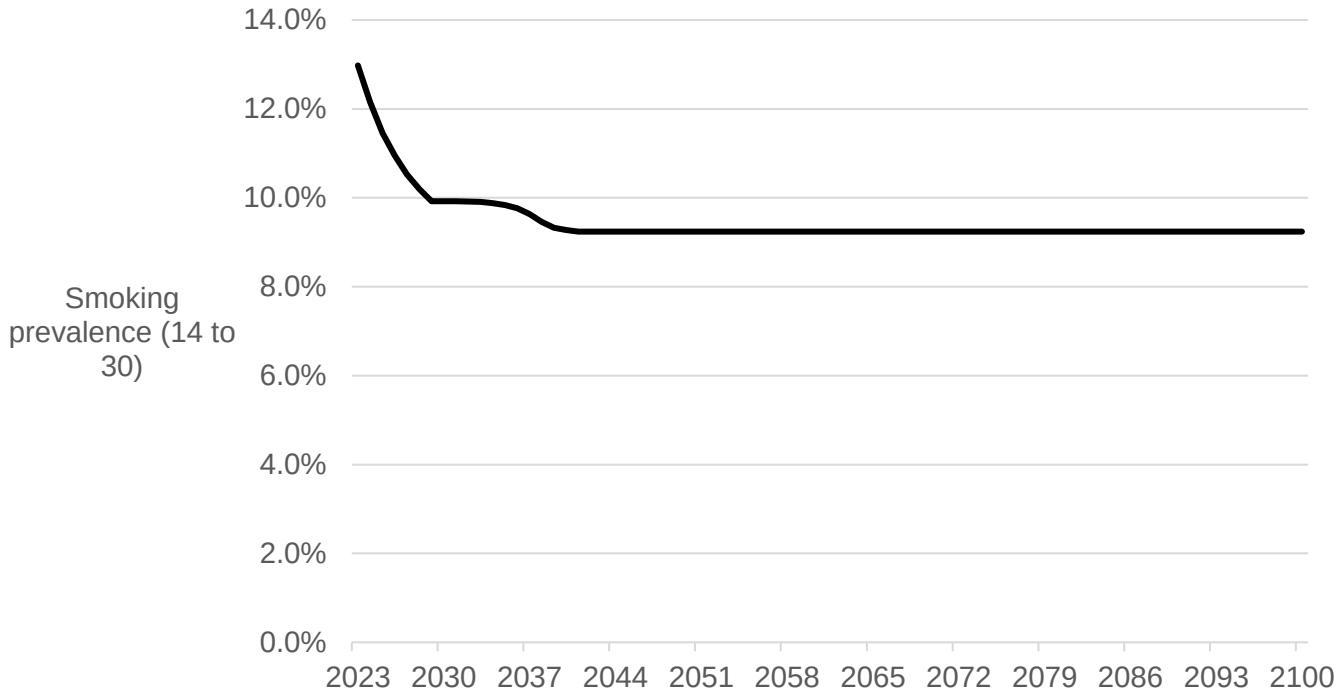
Baseline results

776. Applying baseline transition probabilities to the starting population gives us results for a baseline scenario of no-policy intervention. This shows smoking rates decreasing in the short to medium term, in line with other published estimates from Cancer Research UK's Smoking prevalence projections for England, based on data to 2021[466], and University of Sheffield's projections from 2021, published in the Royal College of Physicians report Smoking and health 2021: a coming of age for tobacco control?[467]

[461] ONS. 2022. Estimates of the population for the UK, England, Wales, Scotland and Northern Ireland.
[462] ONS. 2023. Adult smoking habits in the UK: 2022.
[463] University College London. Smoking Toolkit Study: Top Line Findings. (viewed on 26 January 2024)
[464] NHS Digital. Smoking, Drinking and Drug Use among Young People in England.
[465] Note that these sources are typically from 2021 and 2022 and are used to approximate the 2023 population, which may lead to slight inaccuracies.
[466] Cancer Research UK. 2022. Smoking prevalence projections for England based on data to 2021.
[467] Royal College of Physicians. 2021. Smoking and health 2021: A coming of age for tobacco control?

777. Initial smoking prevalence in 2023 in the model among 14 to 30 year olds is 13.0%. Figure 15 shows the modelled baseline prevalence among 14 to 30 year olds from 2023 to 2100. Without any additional policy measures, baseline prevalence is estimated to decline to a steady state of 9.2% in 2041 and continues at this level throughout the rest of the modelled period.

Figure 15: Modelled baseline prevalence in England among 14 to 30 year olds, 2023 to 2100



Impact of the intervention

Different impact scenarios

778. As we primarily assumed the smokefree generation policy to have an effect on instigation rates, we assume no changes to any other parameters, such as quitting and relapse.

779. On the impact of the intervention, we constructed scenarios based on available evidence and assumptions. You can see 4 different modelled scenarios below. The scenarios range from pessimistic (less than 10% year on year reduction in the instigation rate) to optimistic (90% year on year reduction in the instigation rate). Each scenario takes into account that, at least in the short term, people under the legal age of sale will still take up smoking, something that already happens today.

780. We modelled the smokefree generation intervention to start in 2027, with the age of sale first increasing from 18 to 19, and then increasing by one year each year thereafter.

781. In all scenarios, the model assumes smoking instigation rates reduce year-on-year to reflect ongoing increases in the age of sale (for example in scenario 2, rates reduce 30% in the first year, a further 30% in the second year).

782. Scenario 1 reflects the Institute of Medicine report Raising the minimum age of legal access to tobacco products in the US in 2015[468]. The report projected raising the age of sale by one year to 19 would reduce rates by 10% for most age groups below the threshold, and 5% for some. This scenario also includes a small 'rebound effect;' a 5% increase in instigation for the 2 age groups just above the age of sale threshold.

783. Scenario 2 assumes a 30% reduction in instigation rates per year for people below the age of sale. This reflects a projection from UCL's modelling of recommendations for tobacco control in England, that raising the age of sale to 21 would reduce prevalence among 18 to 20 year olds by 30% and reduce instigation rates by the same amount[469].

784. Scenario 3 assumes a 60% reduction in instigation rates per year for people below the age of sale. This reflects the mid-point of scenario 2 and scenario 4.

785. Scenario 4 assumes a 90% reduction in instigation rates per year for people below the age of sale. This reflects the assumptions used by the New Zealand Government for its implementation of a smokefree generation, which assumed a 100% reduction in instigation rates. We have modelled a 90% year on year reduction here rather than assuming smoking instigation will immediately stop.

786. In addition to these four scenarios, the impact of the scenarios considered in the sensitivity analysis in this impact assessment were also estimated using this model.

787. As described in the main document above, the central scenario is one where, for those under the age of sale, instigation rates for a given age and sex reduce by 30% each year.

788. By applying these rates as an input and running the model, we can see the impact of the policy in terms of the difference in numbers of non-, current, and former smokers by year, age, and sex, as well as differences in mortality.

[468] Bonnie and others. 2015. The Effect on Tobacco Use of Raising Minimum Age of Legal Access to Tobacco Products.
[469] University College London. 2021. UCL modelling of recommendations for tobacco control in England.

Life years gained and QALYs from mortality

789. By looking at differences in the number of people dying when running the policy scenario (with reduced instigation rates) versus the baseline, we can determine the number of smoking-related deaths avoided.

790. Also, by counting the reduction in the number of people in the dead state each year, we can ascertain 'life years gained'. Life years gained is a measure of the total number of years of extra life within the population due to the policy.

791. We can also estimate the quality of life lost in order to generate Quality-Adjusted Life Years (QALYs) lost due to mortality. QALYs are a measure of (health related) quality and length of life, where 1 QALY represents 1 year lived in full health (a quality of life score of 1 on a 0 to 1 scale). Research has found that the mean health-related quality of life score (utility value) for the general population was 0.828 (Sullivan and others)[470]. We use this value to approximate the quality of life of the extra years lived by someone who does not take up smoking as a result of the policy, in the absence of any information about their health status. Multiplying this quality of life score by years of life gained gives us total QALYs, which in turn can be multiplied by £70,000, as per the HM Treasury Green Book[471], to represent the monetary value of additional QALYs.

Disease cases

792. We have estimated the cases avoided of certain health conditions as a result of the smokefree generation policy, specifically:

- lung cancer
- COPD
- CHD
- stroke

793. Together, these four conditions, according to Global Burden of Disease data from 2019[472], represent nearly 60% of the disability-adjusted life year (DALY) burden caused by smoking in England. The DALY is a measure of both the mortality and morbidity impacts of a health condition.

[470] Sullivan and others. 2011. Catalogue of EQ-5D Scores for the United Kingdom.
[471] HMT. 2022. The Green Book: appraisal and evaluation in central government.
[472] Institute for Health Metrics and Evaluation. Global Burden of Disease. (viewed 26 January 2024)

794. We carried out the calculation based on two inputs:

- incidence (number of new cases) data from the Global Burden of Disease 2019 study, for England by age and sex,
- data on the relative risks of developing a disease based on smoking status, from the Royal College of Physicians (RCP) report Hiding in plain sight: treating tobacco dependency in the NHS.[473]

795. The RCP report suggested a relative risk of 8.96 for lung cancer, for current smokers. This means they are 8.96 times more likely to develop the condition than non-smokers. For former smokers, the relative risk was 3.85. The table below provides the Relative Risks used, noting some of these were disaggregated by males and females and in the case of CHD by age too.

Table 52: Relative risks of disease, by smoking status and sex

Condition	Current smokers		Former smokers	
	Males	Females	Males	Females
Lung cancer	8.96		3.85	
Stroke	1.57	1.83	1.08	1.17
COPD	4.01	4.01	3.13	3.13
CHD (<35 year olds)	1	1	1	1
CHD (35-64)	3.18	3.93	1.59	1.48
CHD (65+)	1.96	1.95	1.16	1.37

796. Given the age-disaggregated risks for CHD implied no increased risk in under 35 year olds, in order to be conservative, we applied the other risks only to those over 35.

Costs

797. We applied estimates of the cost of smoking to the model outputs, to determine the savings from a reduction in smoking instigation.

798. These were sourced from Action on Smoking and Health's (ASH's) Ready Reckoner[474]. This cost calculator assesses the annual cost of smoking of:

- Productivity costs (or costs to the economy)
- healthcare costs to the NHS
- social care costs to Local Authorities; the cost of smoking-related fires and productivity costs (meaning the costs to the economy)
- the cost of smoking-related fires

[473] Royal College of Physicians. 2018. Hiding in plain sight: Treating tobacco dependency in the NHS.
[474] Action on smoking and Health. 2023. ASH Ready Reckoner.

799. At the time of this analysis, these estimates from ASH were identified as the best and most up to date available for the different costs of smoking to society.

800. Below is a summary of the methodology and data used to estimate each cost component.

Productivity costs

801. The estimate for the cost of smoking on productivity includes:

- lost productivity due to smoking-related early deaths (valued at the income lost to people dying prematurely)
- reduced employment levels for smokers compared to non-smokers
- reduced earnings for smokers compared to non-smokers

802. The estimate for the cost of lost productivity due to smoking-related early deaths is based on:

- the years of potential productivity lost to smoking-attributable early deaths
- distribution of earnings from employment and self-employment in the UK

803. The years of potential productivity lost to smoking-attributable early deaths is based on:

- data on smoking attributable mortality from OHID's Local tobacco control profiles[475]
- labour market statistics from ONS' Data and analysis from Census 2021[476]
- average remaining years in employment for non-smokers in employment from an analysis of micro data (information at the level of individual respondents) from the Understanding Society (USoc) survey[477]
- micro data on the distribution of earnings from the Department for Work and Pensions' Family resources survey[478]

804. The estimates for the costs of smoking to productivity from reduced employment levels and earnings are based on data from the USoc survey. The data from the USoc survey is used in regressions to estimate the relationship between earnings, employment, and smoking status. The analysis attempts to control for other factors that affect people's earnings and likelihood of being employed, such as age, sex, ethnicity, and education.

[475] OHID. Local Tobacco Control Profiles. (viewed on 26 January 2024)
[476] ONS. Employment and labour market. (viewed on 26 January 2024)
[477] Understanding Society. –Main survey. (viewed on 26 January 2024)
[478] DWP. 2023. Family Resources Survey.

Healthcare costs

805. ASH estimates for the healthcare costs of smoking to the NHS are based on the estimate by the Department of Health and Social Care (DHSC) 2017 policy paper Towards a smoke-free generation: a tobacco control plan for England[479]. These estimates are combined with new estimates from Public Health England for hospital admissions attributable to smoking, as outlined in its response to consultation on proposed changes to the calculation of smoking attributable mortality and hospital admissions[480].

806. Given the DHSC estimate was from 2015, ASH made further adjustments to account for recent changes in:

- NHS costs
- Population sizes
- Distribution of ex-smokers

Social care costs

807. The costs of smoking to social care covers the cost to local authorities of having to provide both care in a person's home (domiciliary care) and residential care. The cost is estimated based on data on smoking status and receipt of social care services from 2 English datasets, which are the:

- English Longitudinal Study of Ageing[481]
- Health Survey for England[482]

808. The data from these datasets is used in regressions to estimate the relationship between smoking status and the need for social care. The analysis attempts to control for other factors that affect a person's use of social care, such as age, sex, family composition, and health status.

Fire costs

809. The cost of fires caused by smoking includes the cost of:

- Fatalities
- Injuries
- Property damage
- Responding to fires

[479] DHSC. 2017. Smoke-free generation: tobacco control plan for England.
[480] PHE. 2022. Proposed changes to how smoking-attributable risk is calculated.
[481] English Longitudinal Study of Ageing. The English Longitudinal Study of Ageing (ELSA).
[482] NHS Digital. Health Survey for England.

810. The estimates for each component are largely based on data from Home Office Fire statistics data tables[483] and the report 'Economic and social cost of fire'[484].

Calculating unit costs

811. To calculate a unit cost (the cost for each current or former smoker, except for fires where we only calculate costs for current smokers), we divided the 4 main categories of costs by the number of current and former smokers. We then divided these by the number of current and/or former smokers to obtain a unit cost, after uplifting costs to 2027 prices (the year the SFG policy comes into effect and the base year for this analysis) using the GDP Deflator[485]. It should be noted that the unit cost was calculated prior to the adjustment, which moved former smokers that had quit 10 or more years ago to the 'non-smoker' state of the model.

812. For healthcare, social care, and productivity costs, we divided them by the total of all current and former smokers. Our reasoning was that health, social care, and employment consequences of smoking can accrue after a person stops smoking. For fires, we divided only by current smokers.

813. The result of this was average costs by current and former smokers of:

- £897 for productivity losses per year
- £119 for healthcare per year
- £71 for social care per year
- £61 for smoking-related fires per year (current smokers only)

814. We then divided these by the number of current and/or former smokers to obtain a unit cost, after uplifting costs to 2027 prices (the year the SFG policy comes into effect and the base year for this analysis) using the GDP Deflator[485].

815. By applying these figures to the differences in current and former smokers from the model, we can estimate the cost savings due to the intervention.

Limitations

816. This analysis used a model to help understand (among uncertainty) the extent of some of the likely consequences of the smokefree generation policy. In developing the model, we made assumptions and simplifications, so it has limitations.

[483] Home Office. 2024. Fire statistics data tables.
[484] Home Office. 2023. Economic and social cost of fire.
[485] HMT. 2023. GDP deflators at market prices, and money GDP September 2023 (Quarterly National Accounts).

Potential underestimation

817. Some elements of the model likely underestimate the impacts. For example:

- we assumed that former smokers who quit 10 or more years ago have the same risk profile as non-smokers, and the model only applies per-person risk and cost figures based on former smokers in general to those who quit more recently

- the model assumed the policy only impacted on instigation rates rather than any further effects, like people smoking less

- the model calculated health outcomes only in terms of mortality and the onset of some smoking-related diseases - this includes QALY calculations that refer only to mortality effects, so do not include the considerable quality of life impacts of smoking-related morbidity

818. So, as well as other diseases, the analysis does not include other health consequences of smoking, including two areas where outcomes are particularly poor for younger people:

1. Smoking during pregnancy, which is a major cause of:

- stillbirths[486]

- low birth weight[487]

- impairment of childhood lung development[488]

Local tobacco control profiles[489] shows that the prevalence of smoking in pregnancy is high for the 17 and underage range, at 31.8%, and the 18 to 19 age range at 31.2%.

2. Passive smoking, which can cause all the harms of smoking, although at lower levels. Children exposed to parental and household smoking are more likely to become regular smokers.

819. 'Smoking, Drinking and Drug use among Young People in England'[490] shows that in 2021, 52% of pupils reported being exposed to second hand smoke in a home or in a car.

820. As well as these limitations, QALY calculations refer only to mortality effects, so do not include the considerable quality of life impacts of smoking-related morbidity.

[486] Flenady and others. 2011. Major risk factors for stillbirth in high-income countries: a systematic review and meta-analysis.
[487] Selveratnam and others. 2023. Objective measures of smoking and caffeine intake and the risk of adverse pregnancy outcomes.
[488] McEvoy and Spindel. 2017. Pulmonary Effects of Maternal Smoking on the Fetus and Child: Effects on Lung Development, Respiratory Morbidities, and Life Long Lung Health.
[489] OHID. Local Tobacco Control Profiles (viewed on 26 January 2024).
[490] NHS Digital. Smoking, Drinking and Drug Use among Young People in England.

Potential overestimation

821. On the other hand, the model may overestimate effects in some areas. It relies on ASH estimates on the cost of smoking. At the time of the analysis, these estimates were the best available that we were aware of, but they may potentially overstate the effect of smoking on employment and earnings, as well as the effect on social care. They also do not include all quantifiable costs of smoking, which would offset this to some extent.

822. So, for example, their productivity loss regression analysis controls for age, ethnicity, and education, but does not control for all aspects of deprivation, which is correlated with higher smoking rates. It is possible that some factors related to deprivation may result in both reduced earnings and higher smoking rates, but those reduced earnings are not due to smoking.

823. Also, we applied societal costs of smoking per person to the whole modelled population of current smokers and former smokers (who quit up to 10 years ago). So, we modelled these to accrue earlier in life than when they might occur in reality, given these costs predominantly arise in older age.

Costs of living longer

824. The model does not include the costs incurred in remaining alive longer. This is standard practice for health economic analysis. In line with the National Institute for Health and Care Excellence (NICE) guidance[491], we have not included costs unrelated to the conditions of interest. However, it is true that there will be additional costs for people who live longer, even excluding government payments like pensions that represent a transfer between parties and do not constitute a societal cost. We have not estimated the extent of these costs here. People who live longer will also contribute to society, and this is not captured beyond direct productivity impacts either.

Limitations in the structure of the Markov model

825. There are limitations, too, in the structure of a Markov model. Markov models only measure changes each cycle, and only look at the aggregate numbers of people in each state. It is not possible to measure an individual and their history in a Markov model. For example, it is not possible to apply a relative risk of disease function to people who stop smoking based on years since quitting.

Other limitations

826. Other, more minor, limitations exist, such as the model not including smokers under 14 or over 90, nor the effects of population growth or migration.

[491] NICE. 2022. 4 Economic evaluation.

Other uncertainties

More generally, there is inherent uncertainty in the analysis, including uncertainty:

- over the impact of the policy
- over the baseline trends in smoking
- in forecasting far into the future

827. It is not possible to overcome these points without further research. So, this analysis should be considered an attempt to assess the scale of potential effect, rather than provide a precisely accurate estimate.