



Health Impacts from Domestic Burning in the UK: Key Findings



Air pollution is the biggest environmental risk to public health in the UK, with outdoor and indoor air pollution both shown to be drivers of serious and potentially fatal disease in children and adults. There is no safe level of air pollution and despite concentrations of many pollutants falling rapidly in the last three decades, it remains a major cause of chronic ill health as well as premature mortality.

Domestic burning, such as the use of indoor log burners, is a major contributor to indoor air pollution. We have modelled a comparison between what emissions reductions are possible under current legislation, and what is possible with a significant change in mindset around domestic burning through either Smoke Control Areas (SCAs) being applied in urban areas across the UK, or the cessation of secondary burning (burning not as a primary heat source).

Pollutant	Total emissions savings (tonnes/yr)		Total emissions savings (% of domestic combustion emissions)		Total emissions savings (% of total UK annual emissions)	
	Scenario 1 SCAs in urban areas across the UK	Scenario 2 no secondary burning	Scenario 1 SCAs in urban areas across the UK	Scenario 2 no secondary burning	Scenario 1 SCAs in urban areas across the UK	Scenario 2 no secondary burning
PM _{2.5}	-1,591	-7,985	-14.6%	-73.1%	-2.4%	-12.3%
NOx	-576	-2,966	-2.5%	-12.7%	-0.1%	-0.4%

Reductions compared to 2023 baseline

The maps show the impact of the modelled scenarios on $\text{PM}_{2.5}$ concentrations across the UK.

Scenario 1 (SCAs):

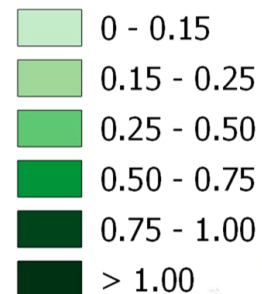
This scenario represents the case if smoke control areas (SCAs) were applied in all urban areas across the UK.

Scenario 2

(No secondary burning):

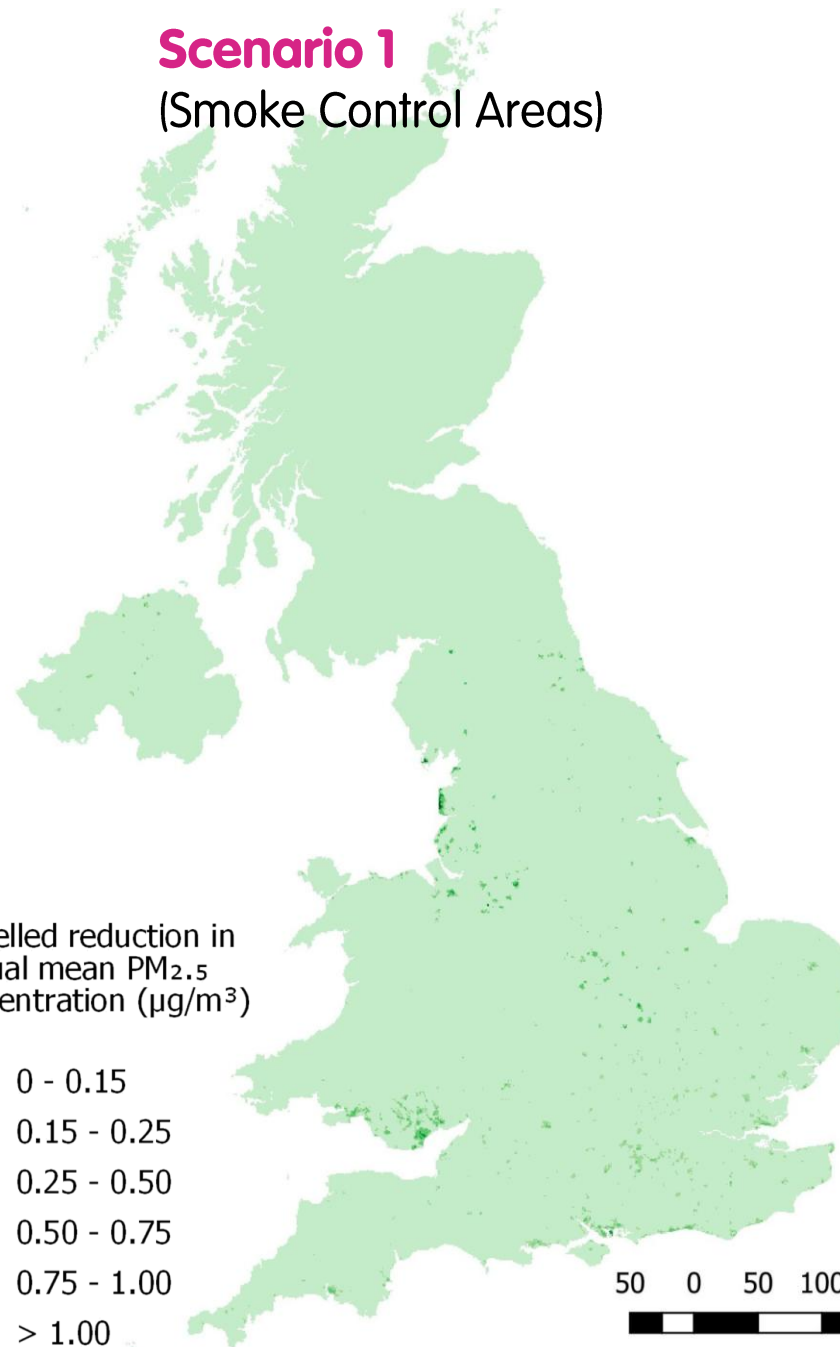
This scenario represents the case if all secondary burning (i.e., burning not as a primary heat source) ceased to occur.

Modelled reduction in annual mean $\text{PM}_{2.5}$ concentration ($\mu\text{g}/\text{m}^3$)



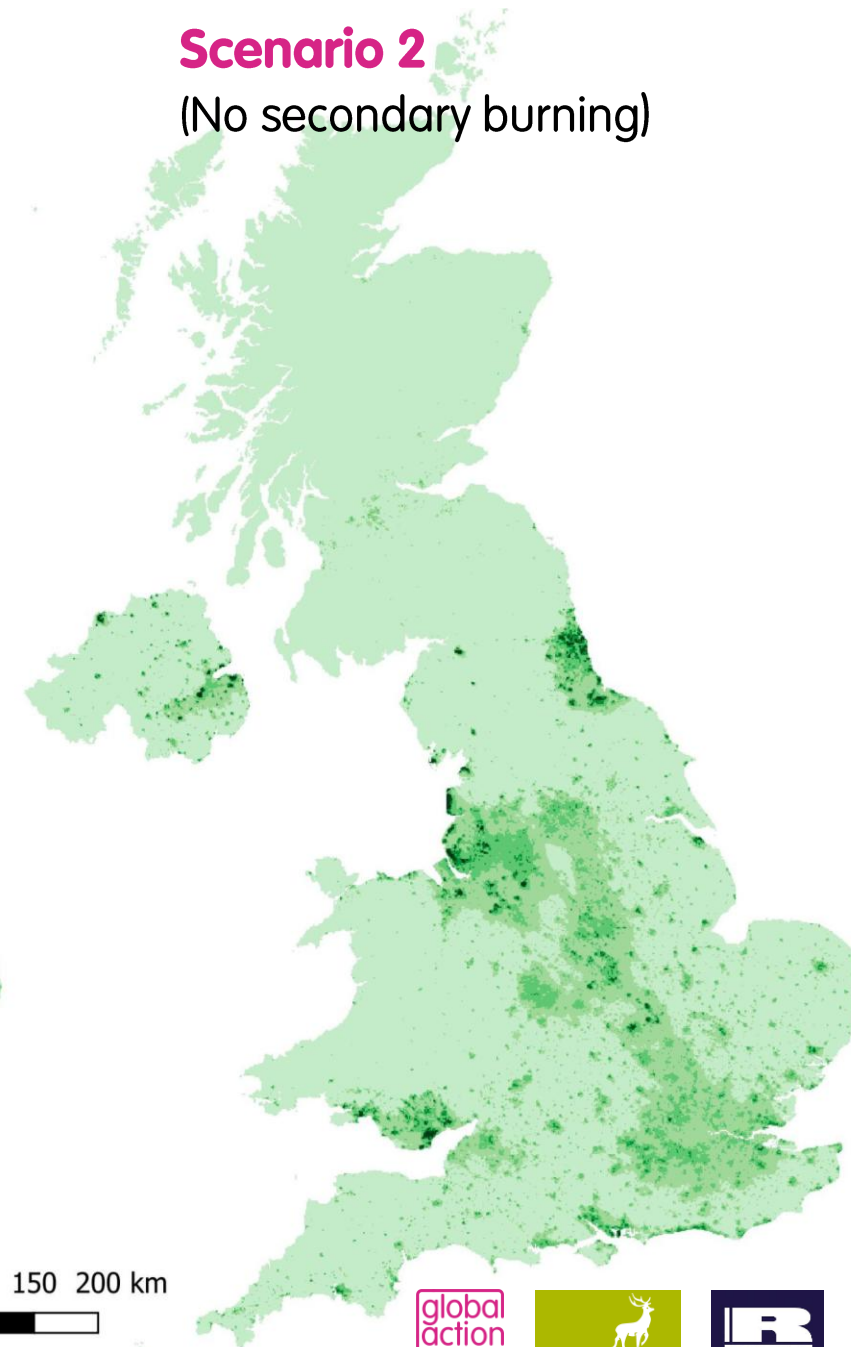
Scenario 1

(Smoke Control Areas)



Scenario 2

(No secondary burning)



50 0 50 100 150 200 km

The improvements in pollutant emissions and concentrations translate to significant health savings, with the removal of secondary burning having a greater impact.

The health benefits of both scenarios have resulted in associated economic savings linked to the burden of disease, NHS healthcare costs, and productivity, as shown in the tables below.

UK Impact	Indicators and units (average annual figures)	Scenario 1 (SCAs)	Scenario 2 (No secondary burning)
Quality-Adjusted Life Years gained	LYs gained from deaths avoided	3,491	16,430
	QALY gained from morbidity avoided	2,427	11,433
Deaths avoided (mortality)	Statistical deaths avoided	321	1,512
Healthcare activity reduced	Respiratory and/or cardiovascular hospital admissions prevented	156	737
UK Monetised Savings	Non-market disease burden (GBP 2025)	£ 411,057,000	£ 1,935,541,100
	Healthcare costs (NHS) (GBP 2025)	£ 11,554,950	£ 54,427,030
	Productivity impacts (GBP 2025)	£ 34,850,800	£ 164,034,900

You can read the full report
on actionforcleanair.org.uk



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10. *Journal of the American Academy of Child and Adolescent Psychiatry*, 37, 10, 1133-1140.



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