Briefing from the United Kingdom Without Incineration Network (UKWIN)

Incineration Overcapacity in England

Meeting England's current residual waste targets would reduce potential feedstock for incinerators to around 16.4 million tonnes in 2027, falling to around 11.7 million by 2042.

With 19 million tonnes of incineration capacity currently operational or under construction across England, incineration capacity can be expected to exceed available feedstock by 2.6 million tonnes in 2027, with incineration overcapacity in England growing to 7.4 million tonnes by 2042, even if no additional incinerators are built.

Further expansion of incineration in England would increase overcapacity at local, regional and national levels, harming current and future efforts to reduce, reuse and recycle.

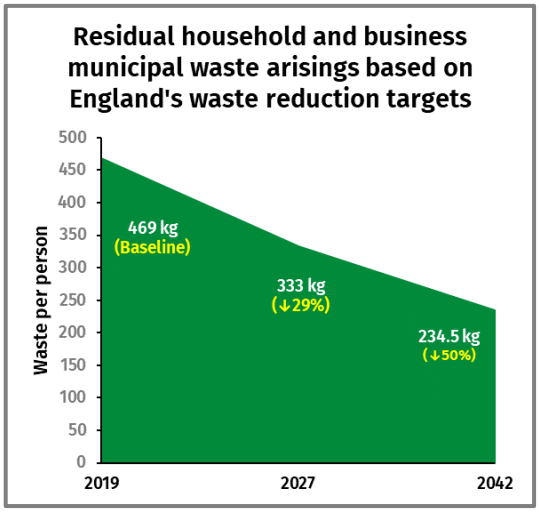
The term 'incineration' is used in this briefing to refer to Energy from Waste (EfW) plants. This avoids confusion with other methods of extracting energy from waste such as anaerobic digestion (AD) and landfill gas capture. The analysis focuses on capacity for burning general household and business waste rather than clinical or hazardous waste.

England's residual waste reduction targets

A legally binding commitment to halve the amount of England's residual waste going to incineration or to landfill by 2042 came into force on 30 January 2023 under the Environmental Targets (Residual Waste) (England) Regulations.

The target in the regulations is accompanied by interim targets set out in the UK Government's Environmental Improvement Plan (EIP) 2023, including the target to reduce household and business ('municipal') waste by 29% by 2027 (against a base year of 2019).

If residual household and business waste in England reduces in line with the targets, it would fall from the 469 kg per person baseline in 2019 to 333 kg by 2027 and 234.5 kg by 2042. This can be combined with forecasts of population growth to estimate future arisings.

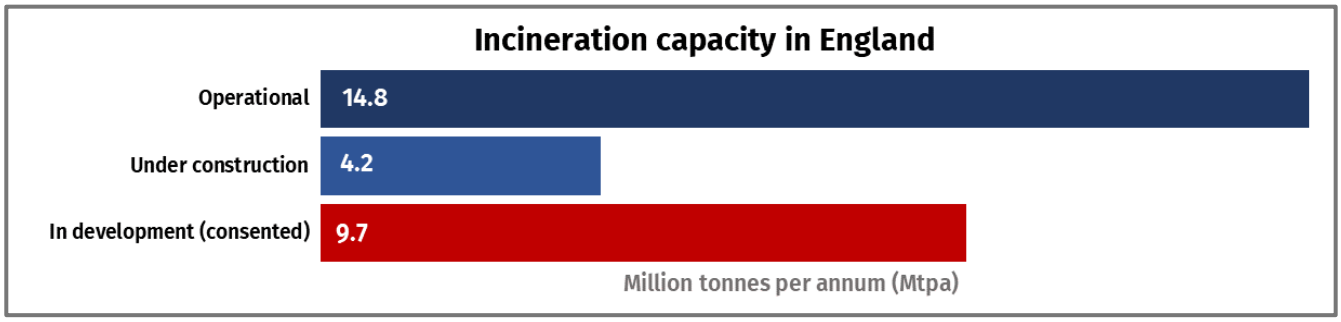


However, as set out in the accompanying Technical Annex, not all of this residual waste is combustible and some of the waste would not be available for use as incinerator feedstock, because it would be used for other purposes such as to heat cement kilns.

Taking these factors into account, UKWIN estimates that the level of potential incinerator feedstock will fall across England from around 23 million tonnes per annum (Mtpa) in 2019 to 16.4 Mtpa by 2027 and to 11.7 Mtpa by 2042.

Incineration capacity across England

To assess incineration overcapacity it is important to understand the capacity that currently exists and that which is in active development. For this assessment it is assumed that incinerators operate at an average of 90% of their permitted (or 'headline') capacity.



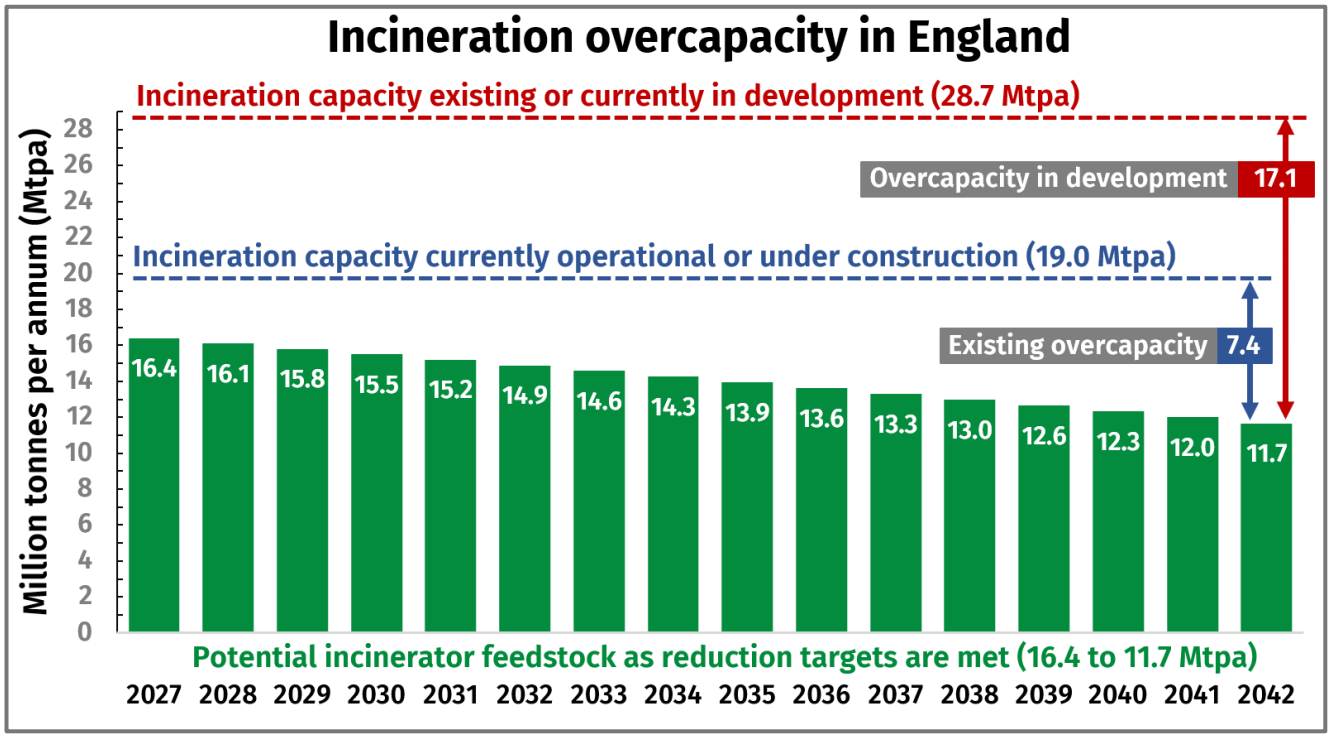
In England there are 51 operational incinerators with a combined capacity of 14.8 Mtpa, with 12 sites under construction adding a further 4.2 Mtpa of capacity. Taken together there is estimated to be around 19 million tonnes of existing incineration capacity.

Additionally, there are 33 incinerators considered to be in 'active development', all of which have secured planning permission, amounting to a combined capacity of 9.7 million tonnes.

The assessment excludes 9 active incinerator proposals with a combined capacity of more than 2.3 million tonnes because these have yet to be granted planning consent.

Incineration overcapacity across England

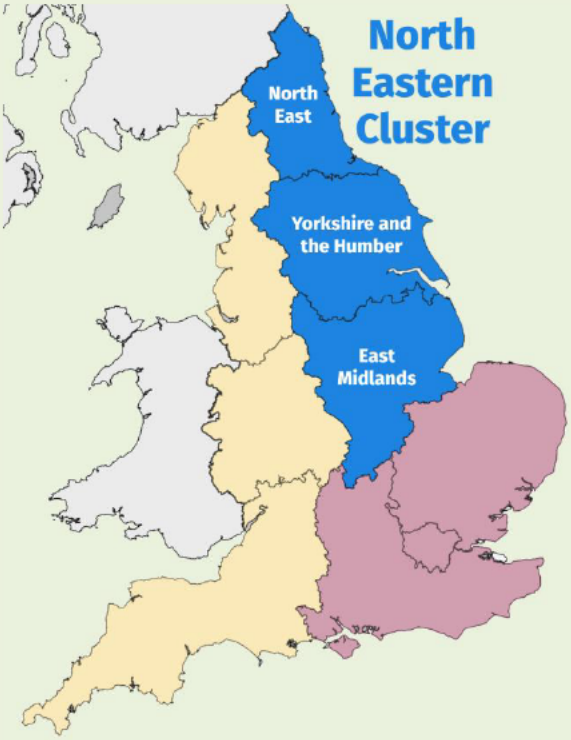
As shown below, if current waste reduction and recycling targets are met then incineration overcapacity will only get worse as time goes on, exceeding 7 million tonnes even if not a single new incinerator is built. If all active incinerator projects that currently have planning permission are built out, incineration overcapacity would exceed 17 million tonnes.

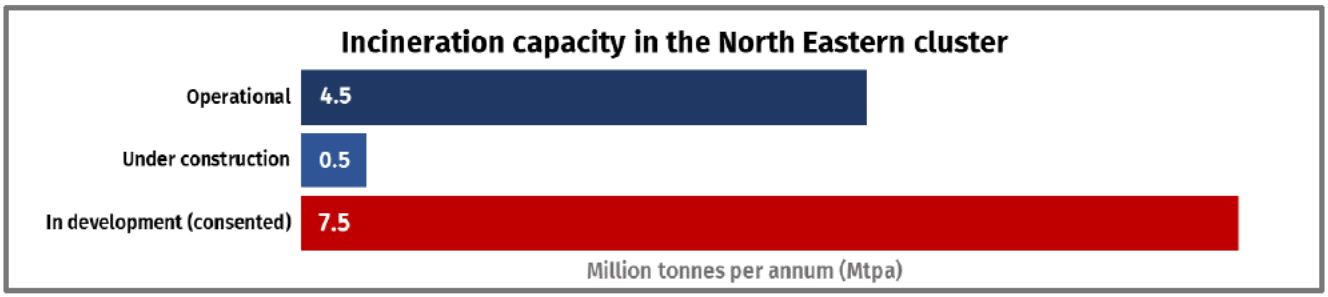


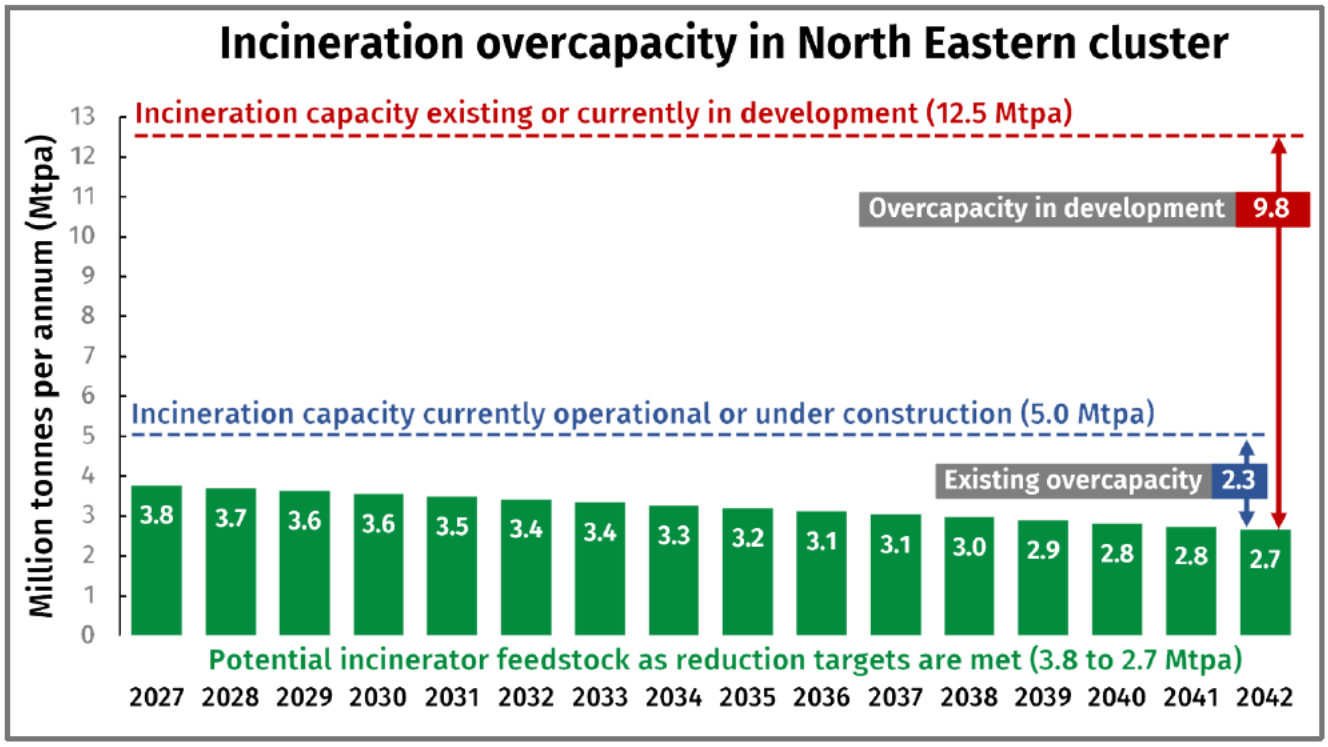
Regional analysis: East Midlands, North East, Yorkshire & the Humber

Across the East Midlands, North East, and Yorkshire & the Humber regions (the 'North Eastern Cluster') there are 15 currently operational incinerators (4.5 Mtpa) and 2 incinerators that are under construction (0.5 Mtpa). Based on these existing incinerators, overcapacity can be expected to reach 1.2 Mtpa by 2027 rising to 2.3 Mtpa by 2042. See Technical Annex for details of these facilities.

There are also 21 incinerators in active development that currently have planning permission (7.5 Mtpa). If all facilities with planning permission are built, overcapacity would rise to 9.8 Mtpa by 2042. Building any of these plants would exacerbate incineration overcapacity nationally and across the North East Cluster.



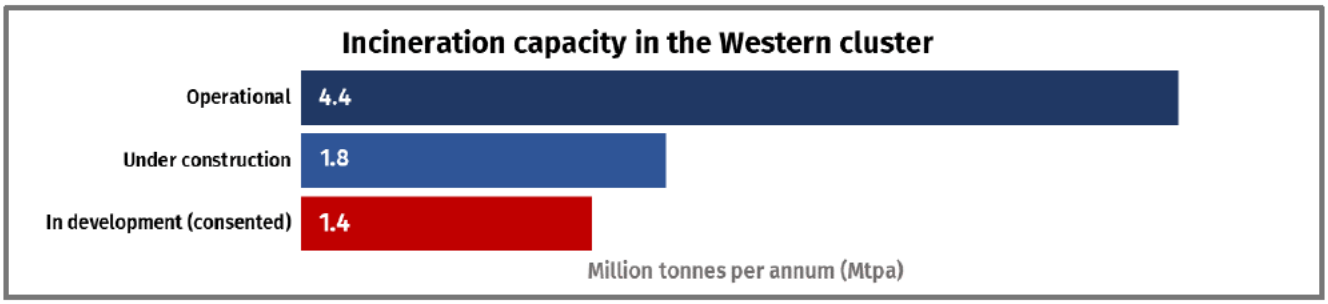


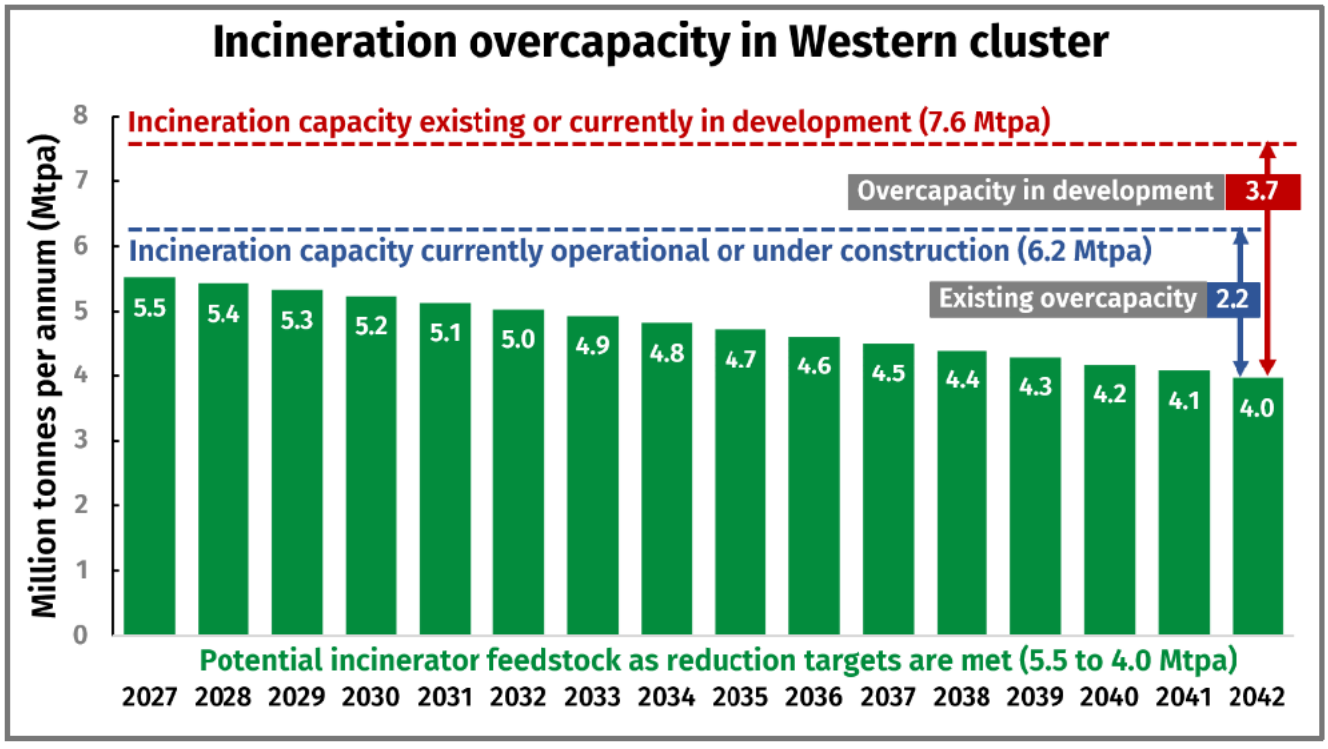


Regional analysis: North West, South West, West Midlands

Across the North West, South West, and West Midlands regions (the 'Western Cluster') there are 17 currently operational incinerators (4.4 Mtpa) and 5 incinerators that are under construction (1.8 Mtpa). Based on these existing incinerators, overcapacity can be expected to reach 0.6 Mtpa by 2027 rising to 2.2 Mtpa by 2042. See Technical Annex for details of these facilities.

There are also 7 incinerators in active development that currently have planning permission (1.4 Mtpa). If all facilities with planning permission are built, overcapacity would rise to 3.7 Mtpa by 2042. Building any of these plants would exacerbate incineration overcapacity nationally and across the Western Cluster.

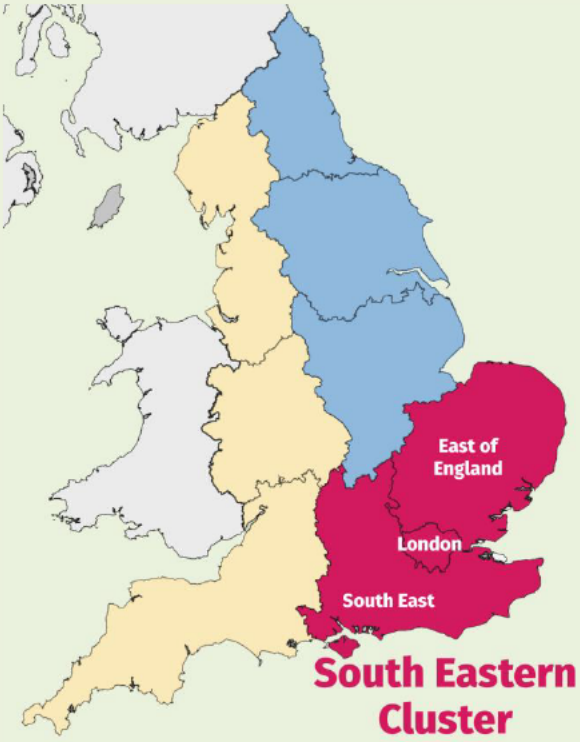


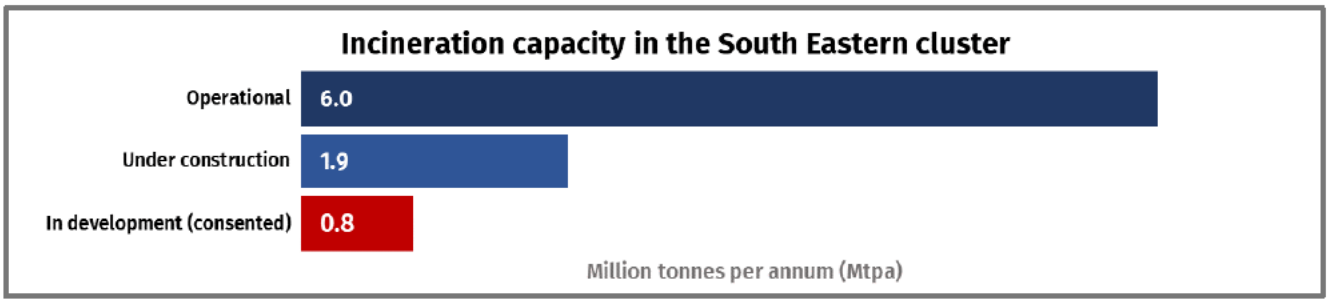


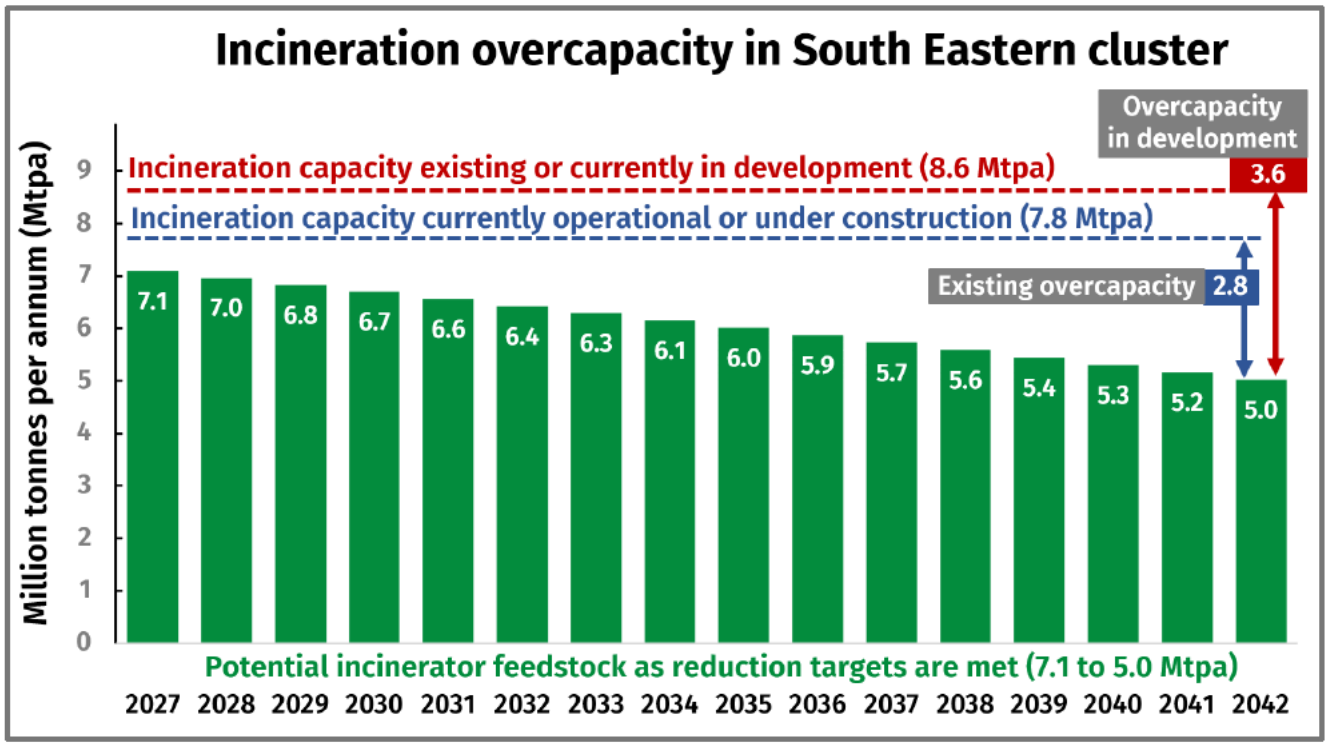
Regional analysis: East of England, London, South East

Across the East of England, London, and South East regions (the 'South Eastern Cluster') there are 19 currently operational incinerators (6 Mtpa) and 5 incinerators that are under construction (1.9 Mtpa). Based on these existing incinerators, overcapacity can be expected to reach 0.7 Mtpa by 2027 rising to 2.8 Mtpa by 2042. See Technical Annex for details of these facilities.

There are also 5 incinerators in active development that currently have planning permission (0.8 Mtpa). If all facilities with planning permission are built, overcapacity would rise to 3.6 Mtpa by 2042. Building any of these plants would exacerbate incineration overcapacity nationally and across the South Eastern Cluster.

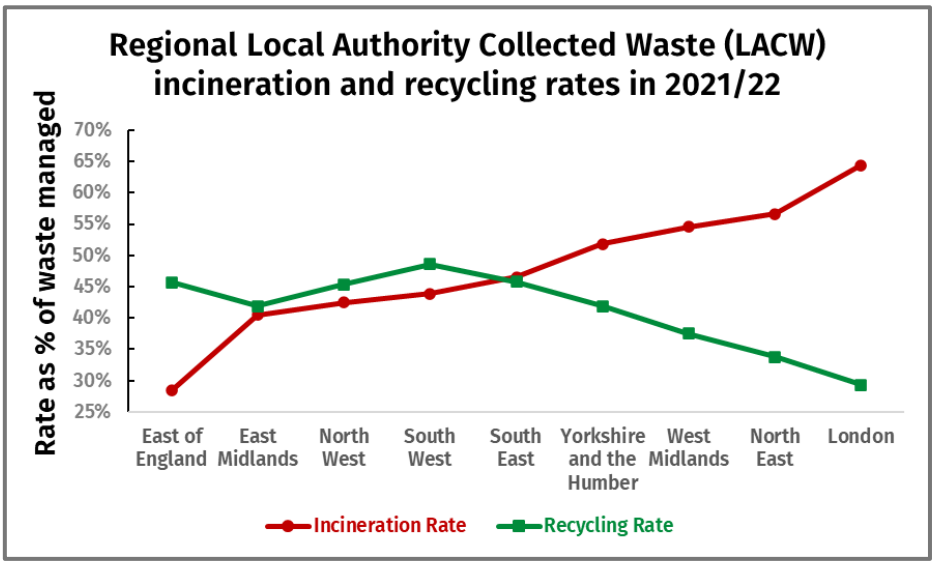






Incineration harms recycling

As shown in the chart below, there is an obvious correlation between high rates of incineration and low rates of recycling across England. Where the rate of incineration is high, the rate of recycling is low and vice versa.



One reason for this correlation is that most of what is incinerated is material that is readily recyclable (including paper, plastic, food, etc.), meaning a significant proportion of what is currently incinerated could and should have been recycled or composted.

According to a Defra report: “Of total residual waste from household sources in England in 2017, an estimated 53% could be categorised as readily recyclable, 27% as potentially recyclable, 12% as potentially substitutable and 8% as difficult to either recycle or substitute”. Similar studies focussed on commercial and industrial waste arrive at similar conclusions about the high recyclability of what is currently treated as ‘residual waste’.

Limiting incinerator feedstock to genuinely residual waste would free up more than half the current capacity, further undermining the rationale for building new incinerators. The more incinerators that are built, the greater the pressure to feed them, and the greater the threat to the top tiers of the waste hierarchy. The Climate Change Committee’s (CCC’s) 2021 Report to Parliament warned that: "If EfW usage is left to grow unchecked, EfW emissions will quickly exceed those of the CCC pathway while undermining recycling and re-use efforts".

The UK Government has acknowledged the need to minimise the amount of waste going to incineration. When justifying the target to halve England’s residual waste by 2042, the Government stated that: "Tackling residual waste reduces the environmental impacts of treatment, including air, soil, and water pollution…It is more sustainable to prevent waste completely and, where waste is unavoidable, to recycle it…The proposed target can drive both waste minimisation and recycling of unavoidable waste…”, noting that a reduction in residual waste treatment “…will lead to an increase in the reuse, repair and remanufacture…and move England’s waste system to a more circular economy”.

Further information, including sources, are set out in the Technical Annex available at: https://ukwin.org.uk/overcapacity/