



**United Kingdom
Without Incineration
Network**

**Interested Party
Presentation for the
Portland Port Appeal**

14th December 2023

Introduction

- UKWIN is represented by Shlomo Downen, National Coordinator, and Josh Downen, Associate Coordinator
- We co-authored UKWIN's October 2023 IP submissions:
 - October 2023 Interested Party Submission
 - Good Practice Guidance for Assessing the Greenhouse Gas (GHG) Impacts of Waste Incineration [CD12.64]
 - Incineration Overcapacity Briefing and Technical Annex [CD12.65]
- We also co-authored UKWIN's November 2023 IP submissions:
 - November 2023 Comments on Appellant's Revised Carbon Assessment
 - Comments on Stephen Othen's Climate Proof
 - Comments on Nick Robert's Planning & Policy & Need / Benefits Proof
- Drawing on these documents, Josh will present UKWIN's oral evidence on climate and I will return to present UKWIN's oral evidence on need.
- This presentation does not introduce any new evidence.
- A copy of these presentation slides has been provided to the Planning Inspectorate.

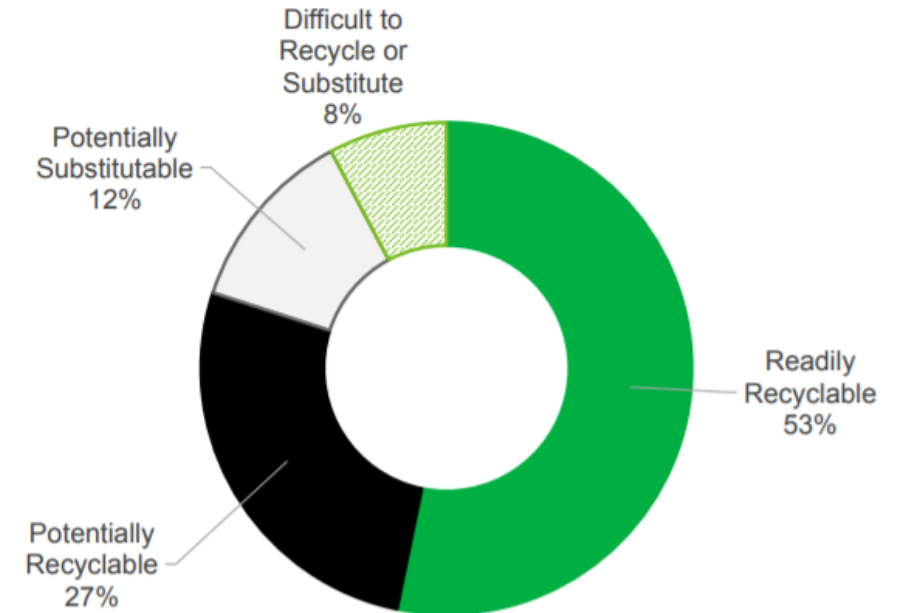
UKWIN's Climate Case

- Uncertainties regarding the Appellant's claimed climate change benefits mean they should be afforded **only limited weight** in the planning balance.
- Such an approach would be consistent with other planning decisions.
- UKWIN's October 2023 IP submission provides two such examples:
 - Consett, Durham where the SoS "**afforded limited weight**" to "the climate change benefits" of the proposed ERF due to "inherent **uncertainties**" (which was relevant to planning balance where proposal refused on landscape grounds which were deemed not to be overcome by benefits).
 - Wheelabrator Kemsley North, Kent [CD12.83 & 84] where the SoS and the ExA found that claimed climate benefits "should **carry little weight** in the assessment" because "All the available evidence casts considerable doubt on whether the 'net benefit' can be ascertained with any great certainty, given it is **highly sensitive to the assumptions** applied" (refused largely due to inconsistency with Kent Local Plan recycling targets).
- As **there are similar uncertainties for the Portland proposal**, a similar conclusion ought to be reached in this Planning Appeal.

Uncertainties Alternative fate of feedstock

- Appellant's GHG case is sensitive to assumptions regarding what would happen to feedstock if not treated at Portland ERF.
- The feedstock might otherwise be reduced, reused, or recycled.
- In his WKN decision letter, the SoS adopted the ExA's view that the ERF "...would divert a significant proportion of waste from recycling rather than landfill" despite the Kemsley applicant's claim that they would only be burning non-recyclable (residual) material.
- Defra's August 2020 progress report for the Resources and Waste Strategy notes: "The large amount of avoidable residual waste...generated by household sources each year suggests there remains substantial opportunity for increased recycling...a substantial quantity of material appears to be going into the residual waste stream, where it could have at least been recycled or dealt with higher up the waste hierarchy".
- UKWIN's evidence shows how incineration can harm recycling.
- If incinerated, it could be used at a more efficient incinerator.
- **Even compared to landfill, claimed benefits are uncertain...**

Chart 13. Avoidable residual waste from household sources, England, 2017, proportion of total residual waste, by category (WP2a)



Only 8% of material within the residual waste stream in England in 2017 was identified as difficult to recycle or substitute.

Uncertainties Displaced Electricity

Impact of different lifetime grid displacement factors (expressed as tonnes of CO₂e per annum)

Pages 22 and 48 of Stephen Othen's Carbon Assessment [PPF11a SO3]:

“The government’s policy is to decarbonise grid electricity, which means that the benefit of displacing electricity will reduce...”

“The benefit of the ERF over its lifetime will vary depending on how the electricity grid develops...”

	DESNZ Generation- based long- run marginal (0.038 kg)	DESNZ Generation- based grid average (0.020 kg)	Applying 2021 DESNZ trajectory to a CCGT baseline (0.079 kg)	Applying 2023 DESNZ trajectory to a CCGT baseline (0.063 kg)
Releases from LFG	81,992	81,992	81,992	81,992
Transport of waste and outputs to landfill	933	933	933	933
Offset of grid electricity from LFG engines	-1,200	-631	-2,494	-1,989
Total landfill emissions	81,725	82,294	80,431	80,936
Transport of waste to and outputs from the ERF	2,600	2,600	2,600	2,600
Offset of grid electricity with ERF generation	-5,198	-2,736	-10,807	-8,618
Emissions from the ERF	89,796	89,796	89,796	89,796
Total ERF Emissions	87,197	89,660	81,588	83,777
Net Benefit of the ERF	-5,472	-7,366	-1,158	-2,841

Negative benefit means worse than landfill

Uncertainties

Landfill Gas Capture Rate

Impact of different lifetime grid displacement factors, applying a 72% landfill gas capture rate (expressed as tCO₂e per annum)

Previous UKWIN Table was based on 68% landfill gas capture rate.

Page 32 of Stephen Othen's Carbon Assessment [PPF11a SO3] states:

“Landfill gas capture rates are assumed to increase gradually from 68% in 2027 to 75% in 2047, as it is likely that landfill performance will improve”, i.e. an average of around 72% over 25 years of operation from 2027 to 2051.

UKWIN Table shows impact of 72%.

	DESNZ Generation-based long-run marginal (0.038 kg)	DESNZ Generation-based grid average (0.020 kg)	Applying 2021 DESNZ trajectory to a CCGT baseline (0.079 kg)	Applying 2023 DESNZ trajectory to a CCGT baseline (0.063 kg)
Releases from LFG	72,213	72,213	72,213	72,213
Transport of waste and outputs to landfill	933	933	933	933
Offset of grid electricity from LFG engines	-1,270	-669	-2,641	-2,106
Total landfill emissions	71,876	72,478	70,505	71,040
Transport of waste to and outputs from the ERF	2,600	2,600	2,600	2,600
Offset of grid electricity with ERF generation	-5,198	-2,736	-10,807	-8,618
Emissions from the ERF	89,796	89,796	89,796	89,796
Total ERF Emissions	87,197	89,660	81,588	83,777
Net Benefit of the ERF	-15,321	-17,182	-11,083	-12,737

Negative benefit means worse than landfill

Uncertainties Biogenic / Biocarbon %

Page 32 of Stephen Othen's Carbon Assessment [PPF11a SO3] states: *"It is likely that waste composition will vary...Variations in waste composition could make the performance of the ERF compared to landfill better or worse"*.

Othen states "the removal of plastics waste and food waste tend to balance out" [PPF10 par 3.5.14] ... but what about also removing paper and card?

- The residual waste target is underpinned by the following interim targets, by 31 January 2028:
 - Reduce residual waste (excluding major mineral waste) produced per person by 24%.
 - Reduce residual waste (excluding major mineral waste) in total tonnes by 21%.
 - Reduce municipal residual waste produced per person by 29%.
 - Reduce residual municipal food waste produced per person by 50%.
 - Reduce residual municipal plastic waste produced per person by 45%.
 - Reduce residual municipal paper and card waste produced per person by 26%.
 - Reduce residual municipal metal waste produced per person by 42%.
 - Reduce residual municipal glass waste produced per person by 48%.

Impact of lower rates of Biocarbon % (results expressed as tCO₂e per annum)

[68% landfill gas capture rate, CCGT grid offset]

	Electricity only tipping point (46.5%)	CHP + Shore Power tipping point (43.3%)	Lower end of biocarbon range (40%)
Releases from LFG	68,163	63,472	58,635
Transport of waste and outputs to landfill	933	933	933
Offset of grid electricity from LFG engines	-9,765	-9,093	-8,400
Total landfill emissions	59,332	55,313	51,169
Transport of waste to and outputs from the ERF	2,600	2,600	2,600
Offset of grid electricity with ERF generation	-50,890	-50,890	-50,890
Emissions from the ERF	107,750	113,840	120,121
Total ERF Emissions	59,460	65,550	71,831
Net Benefit of the ERF	-128	-10,237	-20,662

Negative benefit means worse than landfill

Uncertainties Credit for Carbon Sequestration

- 'Energy recovery for residual waste: A carbon based modelling approach' (Defra, February 2014): *“Landfill...acts as a partial carbon sink for the biogenic carbon. This is a potential additional benefit for landfill over energy from waste”*.
- UKWIN’s evidence shows that “giving full credit for biogenic carbon sequestration in landfill would, on its own, reduce the claimed net ERF benefit by 56,896 tonnes of CO₂e per annum for the Appellant’s nominal capacity case”.
- UKWIN’s evidence shows how that this would result in a net disbenefit of the Portland ERF when compared to landfill across a wide range of circumstances.
- In addition to covering this in UKWIN’s various IP submissions, the rationale for our position is also detailed in our Good Practice Guidance.
- For example, UKWIN cites academic literature which found that: *“...not considering biogenic CO₂ can lead to biased conclusions”*, and UKWIN provides numerous examples of carbon assessments for ERF schemes that give full credit for biogenic carbon sequestration in landfill.

Uncertainties

Credit for Carbon Sequestration

Stephen Othen's Proof (Table 2 of PPF10) confirms that the Portland ERF proposal is sensitive to giving credit for biogenic carbon sequestration in landfill.

While UKWIN's November 2023 comments on Mr Othen's proof set out why we believe he has understated this sensitivity, his evidence nevertheless shows how when credit is given to biogenic carbon sequestration the Portland ERF can be seen to perform worse than landfill.

Table 2: Sequestration sensitivity

Sequestration Rate	50%	Calc	45%	40%	29.5%
Design Waste (11 MJ/kg)		(47.63%)			
Benefit of Appeal Proposal (no sequestration credit)	29,674	41,453	54,497	79,320	131,449
Benefit of Appeal Proposal (with sequestration credit)	-23,554	-9,249	6,592	36,739	100,045
Benefit of Appeal Proposal (with sequestration credit and shore power)	-16,831	-2,508	13,333	43,479	106,786
Maximum tonnage waste (9.95 MJ/kg)		(46.87%)			
Benefit of Appeal Proposal (no sequestration credit)	41,838	58,753	68,831	95,824	152,509
Benefit of Appeal Proposal (with sequestration credit)	-16,041	4,500	16,740	49,521	118,360
Benefit of Appeal Proposal (with sequestration credit and shore power)	-9,300	11,241	23,481	56,262	125,101

Uncertainties

Credit for Carbon Sequestration

ASSUMED DECOMPOSABILITY OF BIOGENIC MATERIAL STREAMS WHEN SENT UNTREATED TO LANDFILL

Stephen Othen states: “This assumes a sequestration rate of 50%, which is considered to be a conservative assumption and is in accordance with DEFRA’s ‘Energy from Waste – A Guide to the Debate’ (2014).” [PPF11a page 14]

When the EfW Guide was written 50% would have been considered conservative because a significant proportion of biogenic waste would have been food waste, which has a relatively low level of sequestration (and therefore a high rate of degradability of biogenic carbon, i.e. DDOC percentage).

It should also be noted that some of the waste is RDF and as such might have a higher sequestration rate than mixed waste due to stabilisation as part of the RDF production process.

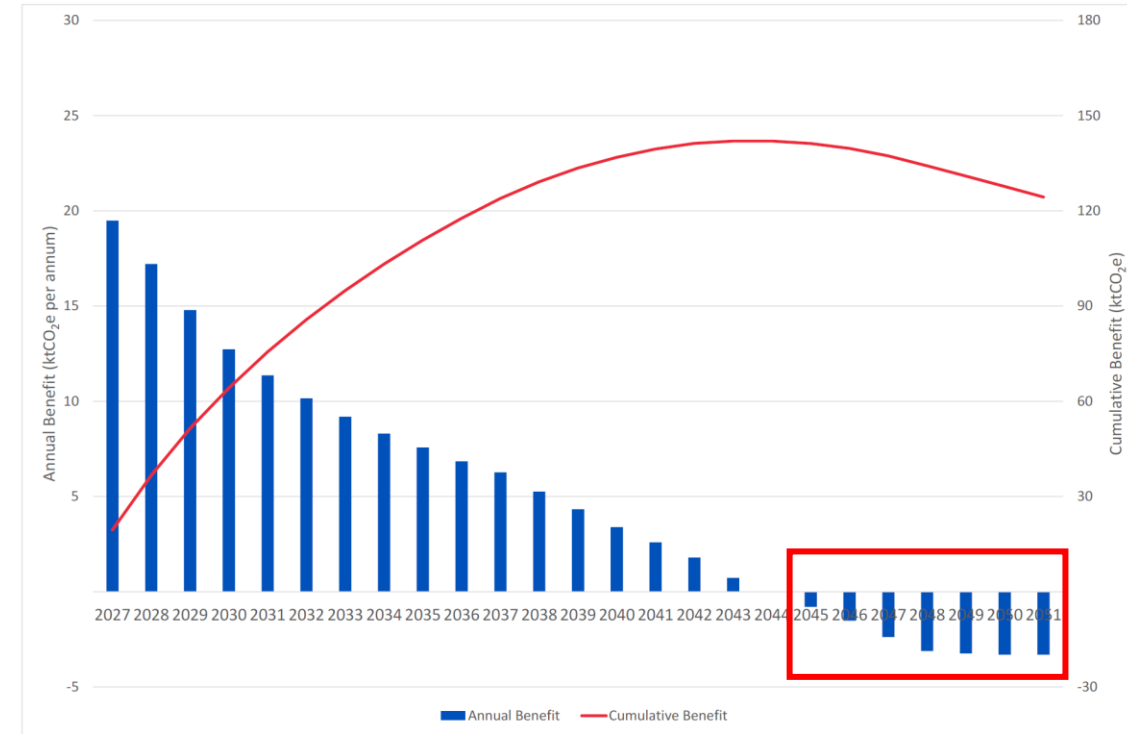
Material stream	Biogenic carbon content	Degradability of biogenic carbon (DDOC percentage)	
Food	32.0%	67.5%	Higher DDOC = Lower sequestration
Garden	44.0%	51.3%	
Mixed Paper and Card	14.0%	49.4%	
Miscellaneous combustibles	17.0%	44.5%	Lower DDOC = Higher sequestration
Textiles (and footwear)	19.0%	33.4%	
Sanitary / disposable nappies	20.0%	28.7%	
Wood	15.0%	28.5%	
Soil and other organic waste	7.0%	3.6%	
Miscellaneous non-combustibles	3.5%	0.0%	
Glass	0.3%	0.0%	
Plastics	0%		
Metals, White Goods and Other Non-biodegradable products	0%		
Non-organic fines	0%		

DDOC content based on MELMod Calculations using the AR5 (2014) data set (provided by BEIS)

Uncertainties Commencement and duration

- Appellant’s lifetime carbon benefit assessment for the appeal only “considers the cumulative benefits over the first 25 years of the ERF’s operation, starting in 2027” (PPF10 para 3.2.57).
- But their Permit documents state: “The minimum operational lifetime of the [ERF] would be many decades (likely more than 25 years)...” and makes assessments based on 30 years of operation.
- Once built there is an economic incentive to keep plants going to recoup initial construction costs, e.g. via periodic refurbishment.
- UKWIN’s overcapacity annex [CD12.65] notes that Eastcroft (Nottingham) and Edmonton (North London) have been operating for around 50 years, and the next oldest plant (SELCHP in London) won’t reach that age until 2043.
- Figure 1 of Stephen Othen’s Carbon Assessment (right) shows that lifetime benefit compared to landfill is highest in the early years of operation and becomes negative from 2045 onwards.
- If commencement is delayed from 2027 – and/or if the facility operates longer than 25 years – then lifetime impact would be worse, based on Appellant’s lifetime assessment assumptions.

Figure 1: Lifetime Carbon Benefit Compared to Landfill



Page 33 of Stephen Othen’s Carbon Assessment

Note: For the Appellant’s adopted timeframe, lifetime benefit depends on the Appellant’s assumptions, e.g. regarding: shore power, heat export, biocarbon %, etc.

Carbon Intensity

- UKWIN provides evidence showing exported ERF electricity is not low carbon.
- For example, the Climate Change Committee's advice that: "In a Net Zero world EfW [ERF] facilities are likely to be significantly higher carbon than other forms of energy production..."
- Of special note is our evidence based on the Appellant's own figures which imply a fossil carbon intensity of 0.656 kg CO₂e/kWh for the electricity that would be exported by the Portland ERF.
- This is far higher than the Appellant's unabated CCGT assumption of 0.372 kg.
- The Portland ERF's carbon intensity is also far higher than the carbon intensity of the progressively decarbonising electricity grid.
- As such, based on the Appellant's own figures, the proposed Portland ERF would export energy with a high carbon intensity and should therefore not be considered to meet the NPPF glossary definition of 'low carbon'.

UKWIN's Climate Case – Any questions?

That was a summary of our climate case.

We are happy to take questions on our climate evidence now and/or after we have given our oral evidence on our need case.

UKWIN's Need Case

- UKWIN's need case is premised on:
 - a) the need to justify need
 - b) national and sub-national incineration (ERF) overcapacity, and
 - c) the narrow geographic scope of the Appellant's assessment
- Dorset Council has given evidence about how Policies 4 and 6 of the Dorset Waste Plan demonstrate a local policy requirement to justify waste need [R06 para 2.20].
- UKWIN will leave it to others to comment on such local policy requirements.

Need to justify need: Policy context

- UKWIN's October IP submission notes:
 - a) the Government's legally-binding commitment to halve residual waste sent to incineration or landfill by 2042 – as set out in the **Environmental Targets (Residual Waste) (England) Regulations 2023** (which came into force on 30th January 2023), and
 - b) the Government's **Environmental Improvement Plan 2023** which includes interim targets for 2027 to reduce residual waste (excluding major mineral waste) and residual municipal waste (i.e. household and business waste)
- UKWIN also drew attention to Defra's Parliamentary Under-Secretary of State May 2023 statement that: "We want to see **less waste being sent to incinerators**, which is **why we set a statutory target** to halve the 2019 level of residual waste by 2042..."
- In line with this statement to Parliament, there are reasons to believe that Government policy will explicitly target for reduction waste currently sent to ERF.
- The Inspector and SoS will wish to consider the Portland ERF proposal's consistency with these waste reduction targets and associated policy statements.

Need to justify need: Policy statements

- As UKWIN noted in our October IP submission, there is a clear national Government policy basis for the need to justify need that supplements any local requirement.
- In support of this, UKWIN cited Government policy as set out by the Minister of State for Defra in 2022 that: “...Proposed new [ERF] plants **must not result in an over-capacity** of EfW [ERF] waste treatment provision **at a local or national level**”.
- This planning appeal benefits from the November 2023 versions of EN-1 and EN-3, which are material planning considerations even for this non-NSIP proposal, and UKWIN’s November 2023 Comments on Nick Roberts’ Proof alluded to EN-1 paragraphs 3.3.39-40 and 5.15.6-7, that:

“As the primary function of EfW [ERF] plants, or similar processes, is to treat waste, **applicants must demonstrate** that proposed facilities are in line with the government’s policy position on the role of energy from waste in treating residual waste. The proposed plant **must not** compete with greater waste prevention, re-use, or recycling, or **result in over-capacity of EfW [ERF] waste treatment at a national or local level**”.

Need to justify need: Policy statements

- The paragraphs from EN-1 and EN-3 highlighted by UKWIN should be afforded great weight as they reflect **current Government thinking** about the importance of **protecting the top tiers of the waste hierarchy, avoiding ERF overcapacity** at local and national levels by **ensuring compatibility with recycling targets** and the 2027 and 2042 **residual waste reduction targets**.
- This includes EN-1 paragraph 5.15.19: “The Secretary of State should have regard to **any potential impacts** on the achievement of resource efficiency and waste reduction targets set under the Environment Act 2021 or wider goals set out in the government's Environmental Improvement Plan 2023”.
- Resources and Waste Strategy [CD9.9]: “...**valuable recyclable material is being lost to landfill or incineration...**” and that: “Residual waste is the mixed material that is typically incinerated for energy recovery or landfilled. **Much of the products and materials contained in this waste could have been prevented, reused or recycled...**”

How ERF capacity can harm recycling

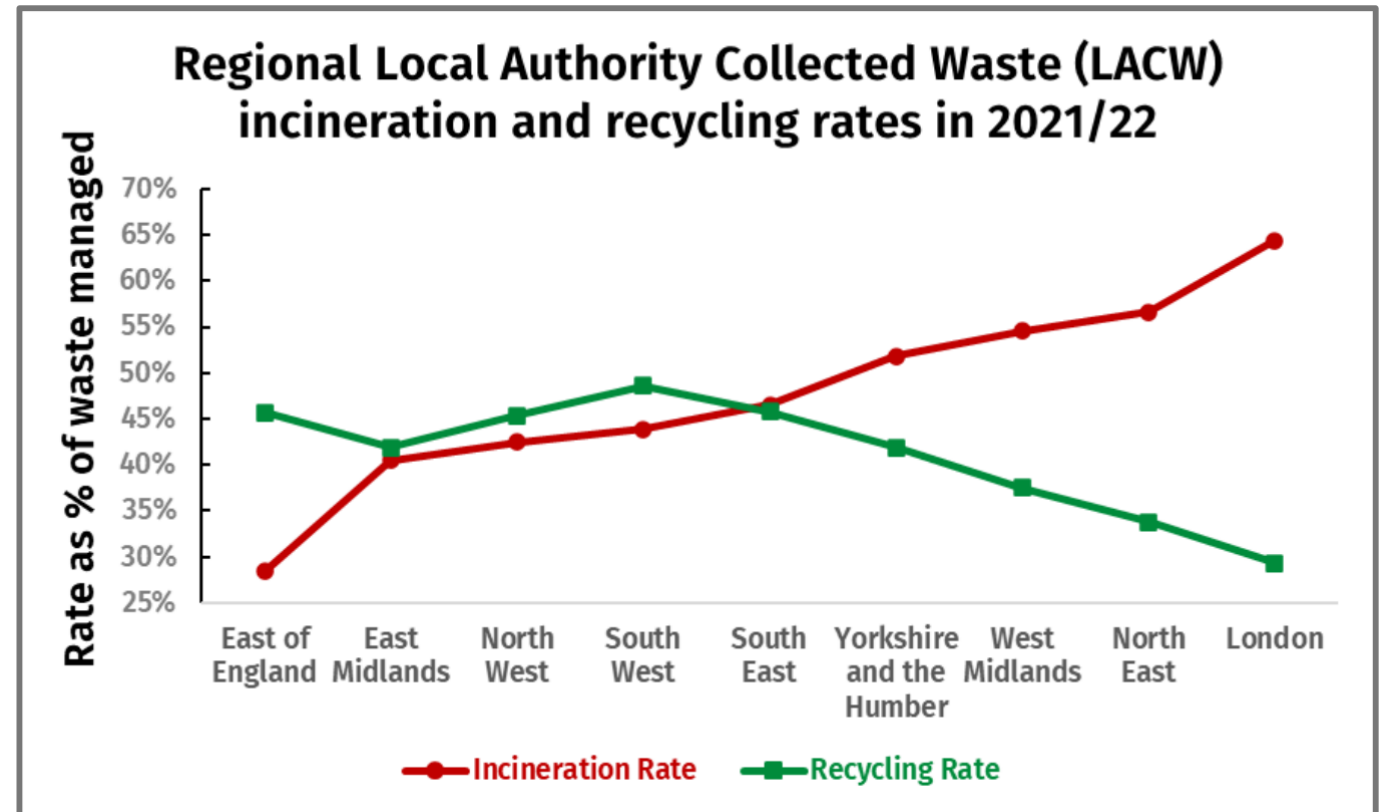
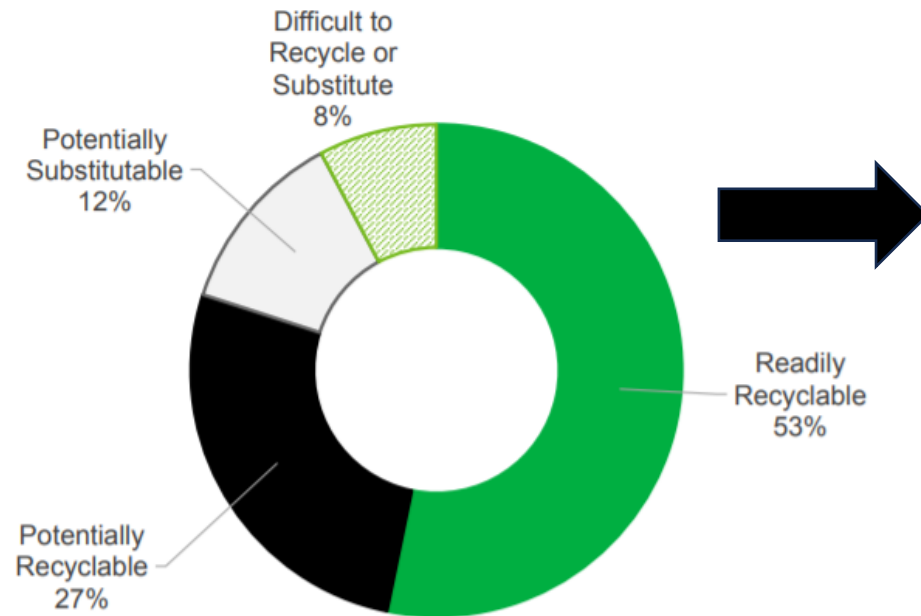
- Overcapacity can make recycling and waste minimisation less economically viable.
- Defra's Guidance on Applying the Waste Hierarchy notes how economic viability can influence council and business decisions on waste generation and management.
- The greater the level of ERF overcapacity, the harder it is for councils to renegotiate or to exit existing waste management contracts without excessive cost implications.
- Furthermore, another key element of reducing residual waste relates to investment in waste education and improvements to Materials Recycling Facilities (MRFs) to maximise the extraction of recyclates.
- There is a financial incentive for ERF operators to maximise how much they burn in order to maximise the income generated from gate fees, and there are operational difficulties that can arise if an incinerator is operating below its minimum capacity.
- The greater the level of ERF overcapacity, the lower the gate fees for incineration, and therefore the lower the return on investment in efforts to divert residual to the top tiers of the waste hierarchy.

Need to justify need: Alternative fate of the feedstock

There is an obvious correlation between high rates of incineration and low rates of recycling across England.

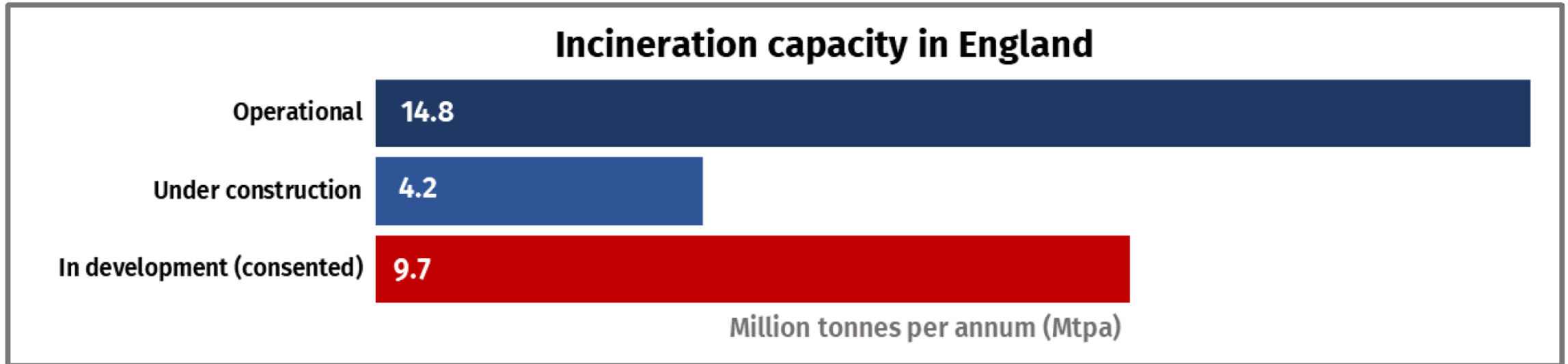
Where the rate of incineration is high, the rate of recycling is low and vice versa.

Chart 13. Avoidable residual waste from household sources, England, 2017, proportion of total residual waste, by category (WP2a)



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.

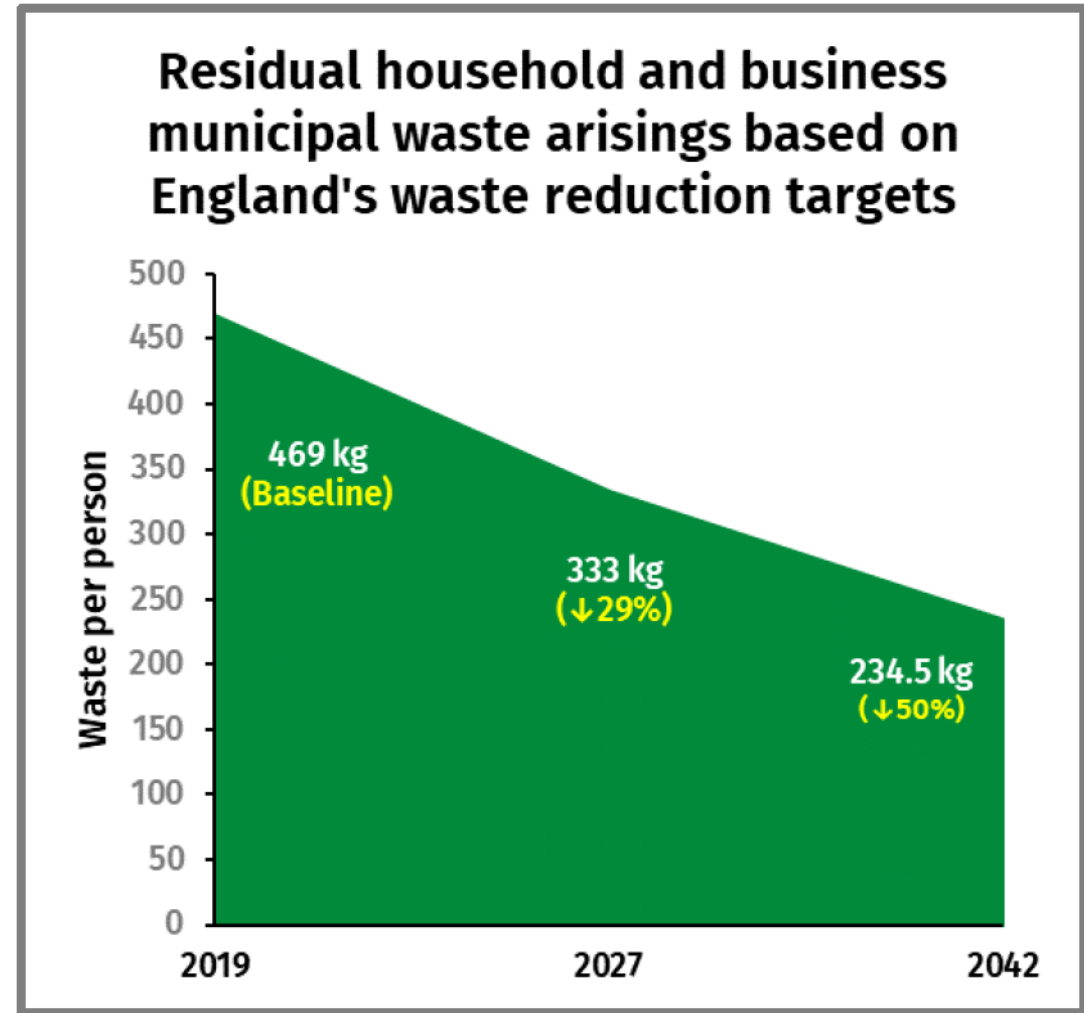


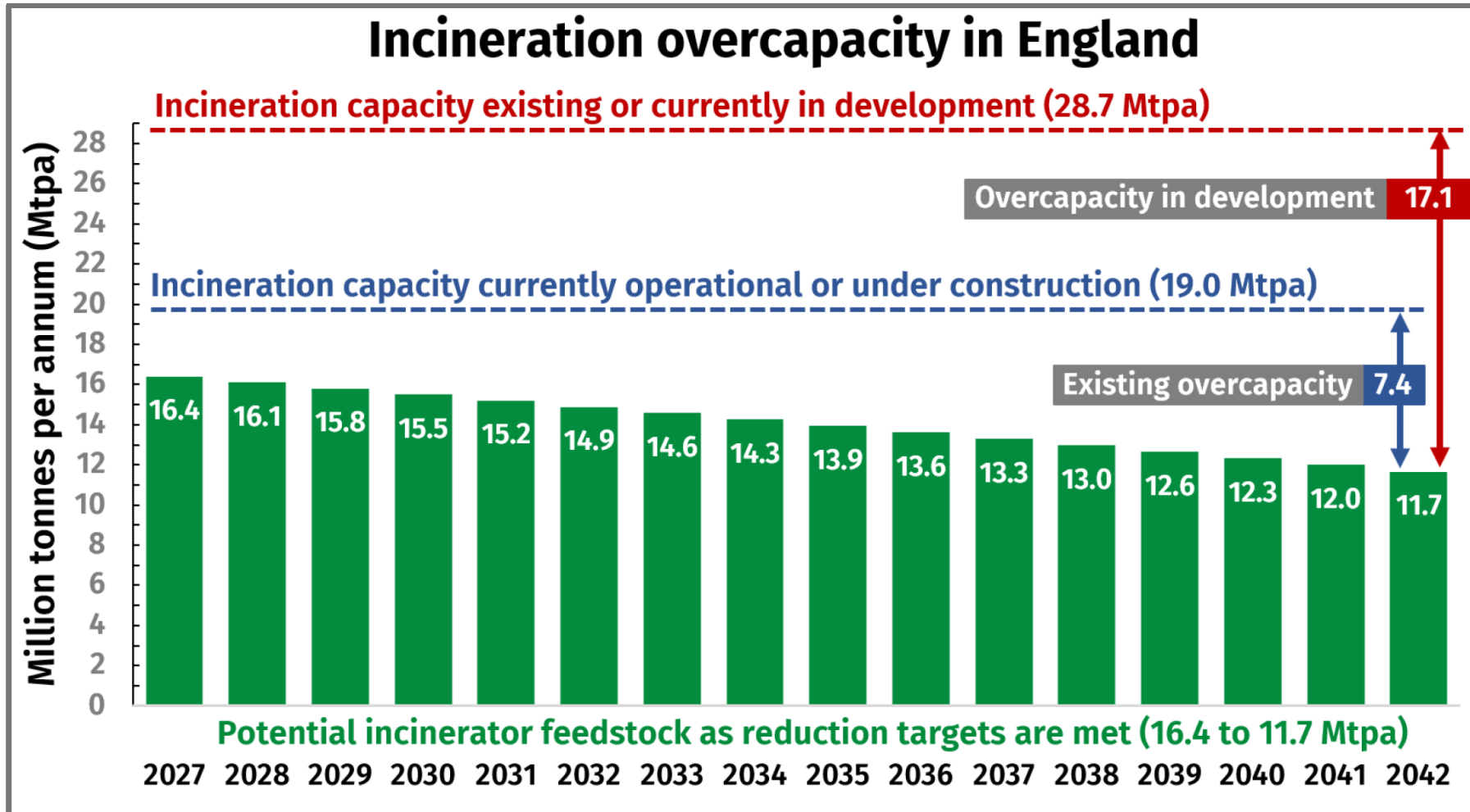
In England there are 51 operational incinerators with a combined capacity of 14.8 Mtpa, with 12 sites under construction adding a further 4.2 Mtpa of capacity. Taken together there is estimated to be around 19 million tonnes of existing incineration capacity.

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.

National ERF overcapacity: Diminishing feedstock

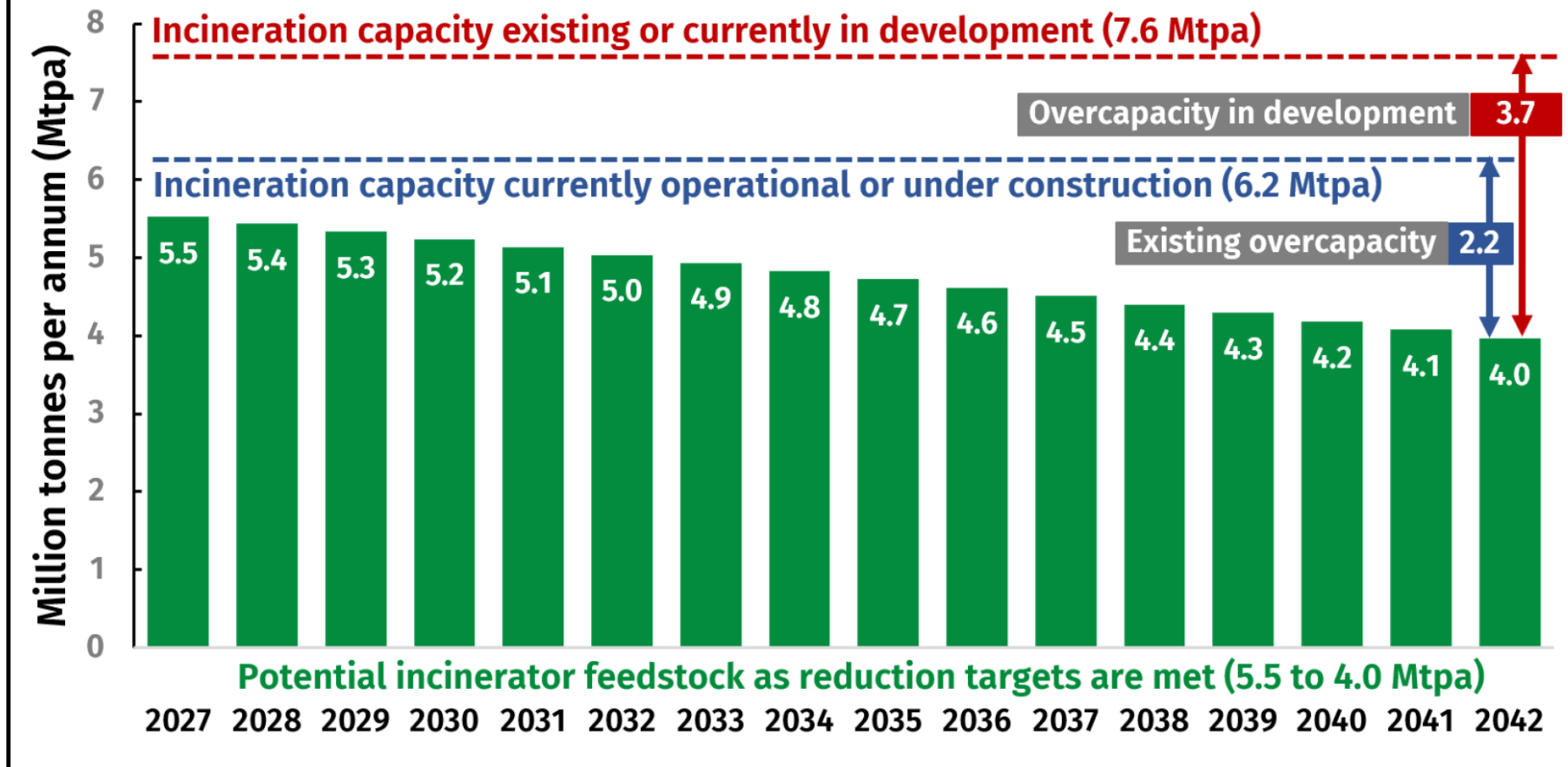
- If residual English household and business waste reduces in line with municipal waste reduction targets, it would fall from the 469 kg per person 2019 baseline to 333 kg by 2027 and 234.5 kg by 2042.
- These per capita figures are combined with forecasts of population growth to estimate future arisings.
- Following the methodology set out in the Technical Annex [CD12.65], meeting England's current residual waste targets would reduce potential ERF feedstock to around 16.4 million tonnes in 2027, falling to around 11.7 million by 2042.
- Diminishing feedstock contrasts with rising capacity, much of this is very new. Tolvik's May 2023 report on 2022 EfW Statistics notes "...as at December 2022 the capacity-weighted average age of the 60 UK EfWs which accepted waste in 2022 was 11.1 years".
- As for older plants, Edmonton is being replaced with increased capacity and Eastcroft has been refurbished.





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

Incineration overcapacity in Western cluster



Based only on existing incinerators (and not taking account of consented ERFs in development), overcapacity across the area that includes Portland can be expected to reach 600,000 t by 2027, rising to 2.2 Mt by 2042.

If all facilities with planning permission are built, overcapacity in the Western Cluster would rise to 3.7 Mt by 2042.

More locally...

- The Appellant's choice of Available ERF capacity is quite selective, e.g. they do not include more than 1 million tonnes of capacity at operational ERFs within 3 hours:
 - c. 377-427,000 tpa of ERF capacity at Viridor's existing operational Severn Road ReSource Recovery Centre in Bristol (around 2 hours and 15 minutes via the M5),
 - c. 500,000 tpa of ERF capacity at Suez's existing operational Severnside ERF in South Gloucestershire (around 2 hours and 15 minutes via the M5),
 - c. 220,000 tpa of ERF capacity at Veolia's existing operational "Integra South East ERF" at Portsmouth (around a 2 hour drive via the M27 and A354).
- The Appellant also appears to discount residual waste treatment capacity on the basis of current long-term waste authority contracts without providing any evidence that those contracts would significantly overlap with the operational timeframe of the proposed Portland ERF, let alone that these contracts include any minimum tonnage guarantees obliging waste authorities to send a specified quantity of waste to be incinerated at the associated ERF throughout the contract period.
- These omissions further undermine the Appellant's need assessment.

Need conclusions

- Rather than a need for the ERF capacity proposed for Portland, there is a clear need to respect and support the management of waste and resources in accordance with the waste hierarchy and to meet the various interim and legally binding targets to reduce residual waste going to either landfill or incineration.
- The need to prioritise the top tiers of the waste hierarchy justifies the dismissal of this appeal and the refusal of the Appellant's proposed excess incinerator capacity.
- Such an outcome would be consistent with the refusal of other incinerator proposals, such as Wheelabrator Kemsley North, on the grounds that the proposed new incineration capacity would be diverting material from recycling.

Any questions?

We are happy to respond to any questions arising from any of UKWIN's oral or written evidence