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Steeple Renewables Project

6.3.17 Appendix 17.2 - Local and Regional Landfill Capacity Assessment

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Local and Regional Landfill Capacity Assessment

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1 Introduction

1.1.1 This report has been produced as requested by Nottinghamshire County Councils Local Impact Report **[REP1-014]** paragraphs 5.5.11 and 5.5.12 as well as the Examining Authority First Written Question **[PD-005]** Q 12.0.7.

1.1.2 It also builds on the waste details provided in **ES Chapter 17: Miscellaneous [APP-074]** with an emphasis on local and regional landfill capacity. **ES Chapter 17: Miscellaneous [APP-074]** sets out disposal of waste generated by the Proposed Development would be in accordance with the waste hierarchy (prevention, reuse, recycle, other recovery). Waste disposal via landfill would be a worst case last choice scenario with nearly all waste streams generated during all phases of development capable of reuse or recycling disposal methods.

1.1.3 **ES Chapter 17: Miscellaneous [APP-074]** concludes "*no significant effects are anticipated in regard to waste, it is not considered any significant in-combination effects with other environmental topics would be produced*".

2 National and Local Planning Policy

National Planning Policy

2.1 National Planning Policy Statements (NPSs) that are relevant to the proposed development are:

- Overarching National Policy Statement for Energy (EN-1)[1];
- National Policy Statement for Renewable Energy Infrastructure (EN-3)[2]; and
- National Policy Statement for Electricity Networks Infrastructure (EN-5)[3].

[1] Department for Energy Security & Net Zero Overarching National Policy Statement for Energy (EN-1). Available at: chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://assets.publishing.service.gov.uk/media/6915ba42bc34c86ce4e6e726/overarching-national-policy-statement-for-energy-en-1-web-accessible.pdf [Accessed on 18/01/2026].
[2] Department for Energy Security & Net Zero National Policy Statement for Renewable Energy Infrastructure (EN-3). Available at: chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://data.parliament.uk/DepositedPapers/Files/DEP2025-0795/NPS_for_Renewable_Energy_Infrastructure_EN-3.pdf [Accessed on 18/01/2026].
[3] Department for Energy Security & Net Zero National Policy Statement for Electricity Networks Infrastructure (EN-5). Available at: chrome-

2.2 NPS EN-1, NPS EN-3 and NPS EN-5 have recently been revised and came into force 6th January 2026. These NPS's set out the Governments energy policy for the delivery . of national significant energy infrastructure, the need for new energy infrastructure, and guidance for the determination of a DCO application.

2.3 Of particular relevance paragraph 5.15.8 of NPS EN-1 states "*the arrangements described and a report setting out the sustainable management of waste and use of resources should include information on how re-use and recycling will be maximised in addition to the proposed waste recovery and disposal system for all waste generated by the development. They should also include an assessment of the impact of the waste arising from development on the capacity of waste management facilities to deal with other waste arising in the area for at least five years of operation*".

2.4 In addition to this, as outlined at paragraph 5.15.14 of NPS EN-1 "*the Secretary of State should be satisfied that:*

• Any such waste will be properly managed, both on-site and off-site;

• The waste from the proposed facility can be dealt with appropriately by the waste infrastructure which is, or is likely to be, available. Such waste arisings should not have an adverse effect on the capacity of existing waste management facilities to deal with other waste arisings in the area; and

• Adequate steps have been taken to give consideration to the circular economy, minimise the volume of waste arisings, and of the volume of waste arisings sent for recovery or disposal, except where that is the best overall environmental outcome".

2.5 NPS EN-3 and NPS EN-5 do not contain specific requirements relevant to the waste assessment of the Proposed Development.

2.6 The National Planning Policy Framework (NPPF) does not contain specific waste policies as these are details within the revised Waste Management Plan for England and the National Planning Practice Guidance (NPPG) for waste and minerals.

2.7 Additional national policy relevant to waste includes:

- The Waste Management Plan for England 2021[4];

extension://efaidnbmnnnibpcajpcglclefindmkaj/https://assets.publishing.service.gov.uk/media/695d12e1b5c46330350ed9a1/national-policy-statement-for-electricity-networks-infrastructure-en-5-web-accessible.pdf [Accessed on 18/01/2026].

[4] Waste Management Plan for England 2021. Available at https://www.gov.uk/government/publications/waste-management-plan-for-england-2021 [Accessed 18/01/2026].

- A Green Future: Our 25 Year Plan to Improve the Environment 2018[5];
- Our Waste, Our Resources: A strategy for England 2018 (Resources and Waste Strategy for England)[6];
- Environmental Improvement Plan 2023[7]; and
- The Waste Prevent Programme for England: Maximising Resources, Minimising Waste[8] 2023.

Local Planning Policy

2.8 Nottinghamshire and Nottingham Waste Local Plan (2025)[9] contains waste policies and those relevant to the Proposed Development are SP1 (Waste Prevention and Re-use) and SP8 (Safeguarding Waste Management Sites).

2.9 Policy SP1 states "*All new development should be designed, constructed, and operated to minimise the creation of waste, maximise the use of recycled materials, and assist with the collection, separation, sorting, recycling and recovery of waste arising from the development during its use*".

2.10 The Proposed Development has been designed and will be constructed and operated to minimise the creation of waste, maximise the use of recycled materials and assist the collection, separation, sorting, recycling and recovery of waste arising from the development during its use.

2.11 **ES Chapter 17: Miscellaneous Issues [APP-074]** sets out the arrangements that are proposed for managing any waste produced by the Proposed Development, in accordance with the waste hierarchy, which are set out in **ES Appendix 4.1 outline**

[5] A Green Future: Our 25 Year Plan to Improve the Environment 2018. Available at chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://assets.publishing.service.gov.uk/media/65fd713d65ca2f00117da89e/CD1.H_HM_Government_A_Green_Future_Our_25_Year_Plan_to_Improve_the_Environment.pdf [Accessed 18/01/2026].
[6] Our Waste, Our Resources: A strategy for England 2018 (Resources and Waste Strategy for England). Available at chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://assets.publishing.service.gov.uk/media/5c18f11740f0b60bbee0d827/resources-waste-strategy-dec-2018.pdf . [Accessed on 18.01.2026].
[7] Environmental Improvement Plan 2023. Available at chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://assets.publishing.service.gov.uk/media/64a6d9c1c531eb000c64fffa/environmental-improvement-plan-2023.pdf. [Accessed on 18.01.2026].
[8] The Waste Prevent Programme for England: Maximising Resources, Minimising Waste 2023. Available at https://www.gov.uk/government/publications/waste-prevention-programme-for-england-maximising-resources-minimising-waste . [Accessed on 18.01.2026].
[9] Nottinghamshire and Nottingham Waste Local Plan (2025). Available at chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://www.nottinghamshire.gov.uk/media/o3dfsast/nottinghamshireandnottinghamwlp.pdf . [Accessed 18.01.2026].

CEMP [APP-089], ES Appendix 4.4 outline OEMP [APP-092] and **ES Appendix 4.2 outline DP [APP-090]** informing detailed plans to be secured by Requirements 7 (CEMP), 9 (OEMP) and 21 (Decommissioning and Restoration) of the **dDCO [APP-042]**.

2.12 Measures include:

a. Increasing recyclability by segregating construction/decommissioning waste to be re- used and recycled where reasonably practicable;

b. Designing, constructing and implementing the Proposed Development in such a way as to minimise the creation of waste and maximise the use of alternative materials with lower embodied carbon, such as locally sourced products and materials with a higher recycled content where feasible; and

c. Reusing suitable infrastructure and resources where possible to minimise the use of natural resources and unnecessary materials (e.g. reusing excavated soil for fill requirements).

2.13 **ES Chapter 17: Miscellaneous Issues [APP-074]** concludes that there would be no significant impacts relating to materials and waste during construction, operation or decommissioning. No adverse effects are expected in relation to the ability of existing waste management facilities to deal with other waste from other solar DCO's in the area. The Applicant is committed to properly managing all waste from the Proposed Development, including on-site and off-site, by dealing with it appropriately with available waste infrastructure.

2.14 During decommissioning, the Scheme will be subject to measures and procedures defined within a DP as secured through the DCO. **ES Appendix 4.2 outline DP [APP-090]** has been submitted with the DCO application.

2.15 The Proposed Development is therefore considered to comply with policy SP1.

2.16 Policy SP8 states:

"*1) Nottinghamshire and Nottingham City will seek to avoid the loss of existing authorised waste management facilities, including potential extensions; sites which have an unimplemented planning permission; and facilities to transport waste, such as rail or water.*

2) Proposals, including both planning applications and allocations in local plans, for non-waste uses near existing or permitted waste management facilities will need to

provide suitable mitigation before the development is completed to address significant adverse impacts and demonstrate that the waste management uses can operate without unreasonable restrictions being placed upon them.

3) Where proposed non-waste development would have an unacceptable impact on a waste management facility, the applicant will need to demonstrate that there are wider social and/or economic benefits that outweigh the retention of the site or infrastructure for waste use and either:

a) The equivalent, suitable and appropriate capacity will be provided elsewhere prior to the non-waste development; or

b) The waste capacity and/ or safeguarded site is no longer required.

4) Where proposals are within the Cordon Sanitaire of a wastewater treatment facility, the applicant will need to discuss the proposal with the water company which operates the site and demonstrate that they have no objections which cannot be appropriately mitigated".

2.17 Policy SP8 refers to safeguarding Waste Management Sites, including from non-waste development. There are no Waste Management Site within or close proximity of the Order Limits. Nottinghamshire County Council comments at 5.5.3 of the **Local Impact Report [REP1-014]** confirms there are no safeguarding concerns. Therefore the proposal complies with policy SP8.

3 Assumptions, Limitations and Uncertainties

3.1 This report has been undertaken on the basis of the information available at the time of the assessment and the limitations this presents are reported including

- Future baselines are assumed to be the same as current baselines;
- Waste estimates are based upon project specific information provided by other national infrastructure projects (NSIP) solar schemes;
- Solar panels, inverters, transformers, switchgears and other supporting equipment manufactured off-site to specific sizes.

3.2 A waste recovery rate of 70% is assumed to be achievable for construction, operation and decommissioning for the purpose of this assessment. This is in line with national target for recovery of construction and demolition (C&D) waste of 70%

by weight, as set out in the revised Waste Framework Directive (2025)[10] and the Waste Management Plan for England[11]. IEMA Guidance[12] outlines that a good practice landfill diversion target of 90% has been achieved and exceeded by major UK developments. In 2020, the most recent year for which data is available, the UK generated 59.4 million tonnes of non-hazardous C&D waste, of which 55 million tonnes was recovered representing a recovery rate of 92.6%. The applicant is committed to reuse and recycling as much waste as possible.

3.3 In conclusion our assumptions generate a reasonable worst case scenario.

4 Study Area

4.1 In accordance with IEMA Guidance, two study areas have been defined: a Proposed Development Study Area (within which waste associated with the Proposed Development is generated, construction materials are used and waste sites are present) and an Expansive Study Area (within which landfills and other waste management facilities that manage waste generated by the Proposed Development are likely to be located). Collectively they are referred to as "the Study Areas".

Proposed Development Study Area (Local)

4.2 The Proposed Development Study Area for construction, operation (including maintenance) and decommissioning waste generation comprises the Proposed Development Site together with any temporary land requirements during preliminary works and construction. The Proposed Development Study Area for impacts on allocate/ safeguarded waste sites during construction, operation and decommissioning is aligned to the Proposed Development Boundary established by the Order Limits.

Expansive Study Area (Regional)

4.3 The Expansive Study Area (within which landfills and other waste management facilities that manage waste generated by the Proposed Development are likely to be located) for non-hazardous and inert waste management is the East Midlands

[10] Waste Framework Directive 2025. https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32025L1892&qid=1760531838376 Accessed 18/01/2025].
[11] Waste Management Plan for England 2021. Available at https://www.gov.uk/government/publications/waste-management-plan-for-england-2021 [Accessed 18/01/2026].

[12] IEMA Guidance. Available at: Guidance https://www.isepglobal.org/ [Accessed 18.01.2026].

region. The Expansive Study Area and regions include the following sub-regions, as outlined in the Environment Agency's 2024 Waste Summary Tables for England version 1[13]:

- Derbyshire;
- Leicestershire;
- Lincolnshire;
- Northamptonshire; and
- Nottinghamshire.

4.4 The Study Area for hazardous waste management is defined based in professional judgment and informed consideration of the proximity principle. The proximity principle for hazardous waste in England is outlined in Principle 2 – Infrastructure Provision in the Strategy for Hazardous Wate Management in England[14] that states "*we look to the market for the development of hazardous waste infrastructure, which implements the hierarchy for the management of hazardous waste and meets the needs of the UK to ensure that the country as a whole is self-sufficient in hazardous waste disposal, facilities are put in place for hazardous waste recovery in England, and the proximity principle is met*". Planning for hazardous waste management is also undertaken at a national level and therefore the Expansive Study Area for hazardous waste management is England.

5 Assessment Methodology

5.1 The assessment of waste considers:

- Waste producers have a legal duty of care to manage their waste in accordance with regulations and to ensure that any waste leaving the site where it is generated is transferred to a suitable licensed waste facility for further treatment or disposal;
- Facilities transferring, treating or disposing of waste must be either licensed or apply for an exemption from a license, and impacts arising from the operation of

[13] Environment Agency's 2024 Waste Summary Tables for England version 1. Available on https://ckan.publishing.service.gov.uk/dataset/2024-waste-data-interrogator/resource/f27f486b-8816-4d81-9f79-d5f27d7553dd . [Accessed on 18.01.2026]
[14] Hazardous Waste England (2013). Available on https://www.gov.uk/government/publications/hazardous-waste-national-policy-statement . [Accessed on 18.01.2026].

waste management facilities are considered as part of the planning and permitting process for these facilities themselves; and

- As part of their planning function, Waste Planning Authorities (WPA's) are required to ensure sufficient land is available to accommodate facilities for the treatment of all waste arising in the area, either within the WPA area, or through export to suitable facilities in other areas.

5.2 Scope of the assessment is to consider waste arising from construction, operation and decommissioning phases of the Proposed Development as well as the available landfill void capacity. This assessment does not include:

- waste arising from extraction, processing and manufacturing of construction and products on the basis these products and materials are being developed in a manufacturing environment with their own waste management plans, facilities and supply chain, which are potentially in different regions of the UK (or world) and therefore outside the geographical scope of this assessment. Such matters cannot be accurately predicted and assesses as they relate to procurement decisions that cannot be assured.
- Other environmental impacts associated with management of waste from the Proposed Development – Other environmental impacts associated with the management of waste from the Proposed Development (e.g. air quality, noise, traffic etc resulting from generation, handling, on-site temporary storage or off-site transport of waste are addresses in relevant chapters of the **Environmental Statement ('ES') [APP-059 to APP-075, REP2-018 and REP2-020]**.
- Changes to allocated/safeguarded waste site – There are no allocated/ safeguarded waste sites within the Proposed Development boundary.

Impact Assessment Methodology

5.3 The sensitive receptor for the assessment of waste impacts is the void capacity in the Expansive Study Area of the East Midlands (non-hazardous and inert landfill void capacity as defined in the IEMA Guidance[15] "*landfill is a finite resource, and hence – through the ongoing disposal of waste – there is a continued need to expand existing and develop new facilities. This requires the depletion of natural and other resources which, in turn, adversely impacts the environment*".

[15] IEMA Guidance. Available at: Guidance https://www.isepglobal.org/ [Accessed 18.01.2026].

5.4 The sensitivity of waste relates to availability of landfill capacity in the absence of the Proposed Development as outlined in the IEMA Guidance[16] "*landfill capacity is recognised as an unsustainable and increasingly scarce option for managing waste.*" The sensitivity of landfill capacity is assessed based on a review of historic landfill void capacity trends where available and relevant policy documents.

5.5 Criteria used to determine the sensitivity of landfill capacity is described within **Table One** below:

Effects	Criteria for Inert and Non-Hazardous Landfill Capacity Sensitivity
Negligible	Across the construction and/or operational phases, the baseline/future baseline (i.e. without the Proposed Development) of regional inert and non-hazardous landfill capacity is expected to remain unchanged or is expected to increase through a committed change in capacity.
Low	Across construction and/or operational phases, the baseline/future baseline (i.e. without the Proposed Development) of regional inert and non-hazardous landfill capacity is expected to reduce minimally by <1% as a result of waste forecasts.
Medium	Across construction and/or operational phases, the baseline/future baseline (i.e. without the Proposed Development) of regional inert and non-hazardous landfill capacity is expected to reduce noticeable by 1 to 5 % as a result of waste forecasts.
High	Across construction and/or operational phases, the baseline/future baseline (i.e. without the Proposed Development) of regional inert and non-hazardous landfill capacity is expected to reduce considerably by 6 to 10% as a result of waste forecasts.
Very High	Across construction and/or operational phases, the baseline/future baseline (i.e. without the Proposed Development) of regional inert and non-hazardous landfill capacity is: • Expected to reduce very considerably (by > 10%); • End during construction or operation; • Is already known to be unavailable; or Would require new capacity or infrastructure to be put in place to meet forecast demand.

***Table One** - Criteria used to determine the sensitivity of landfill capacity.*

[16] IEMA Guidance. Available at: Guidance https://www.isepglobal.org/ [Accessed 18.01.2026].

5.6 Criteria used to determine the sensitivity of hazardous landfill capacity is described within **Table Two** below:

Effects	Criteria for Inert and Non-Hazardous Landfill Capacity Sensitivity
Negligible	Across the construction and/or operational phases, the baseline/future baseline (i.e. without the Proposed Development) of regional (or where justified) hazardous landfill capacity is expected to remain unchanged or is expected to increase through a committed change in capacity.
Low	Across construction and/or operational phases, the baseline/future baseline (i.e. without the Proposed Development) of regional (or where justified) hazardous landfill capacity is expected to reduce minimally by <0.1% as a result of waste forecasts.
Medium	Across construction and/or operational phases, the baseline/future baseline (i.e. without the Proposed Development) of regional (or where justified) hazardous landfill capacity is expected to reduce noticeable by 0.1 to 0.5 % as a result of waste forecasts.
High	Across construction and/or operational phases, the baseline/future baseline (i.e. without the Proposed Development) of regional (or where justified) hazardous landfill capacity is expected to reduce considerably by 0.5 to 1% as a result of waste forecasts.
Very High	Across construction and/or operational phases, the baseline/future baseline (i.e. without the Proposed Development) of regional (or where justified) hazardous landfill capacity is: • Expected to reduce very considerably (by > 10%); • End during construction or operation; • Is already known to be unavailable; or Would require new capacity or infrastructure to be put in place to meet forecast demand.

***Table Two** - Criteria used to determine the sensitivity of hazardous landfill capacity.*

5.7 Waste receptor sensitivity is determined as “very high”. There is no publicly available information on any potential change to landfill capacity by the time of the construction, operation or decommissioning of the Proposed Development. Therefore a worst-case scenario for sensitivity is considered (e.g. landfill capacity is assumed to remain the same but a very considerable reduction in capacity cannot

be excluded). A scenario in which no landfill void space is available is deemed to be unrealistic.

5.8 IEMA Guidance offers two methods of assess waste effects methods known as W1 (Void Capacity) and W2 (Landfill Diversion). W1 has been chosen for this assessment where the magnitude of impact from waste is assessed by determining the percentage of remaining landfill void capacity that will be depleted by waste produced during construction and or operation. In a worst case scenario, where landfill sensitivity is high, a significant effect would occur at a magnitude of minor, which for non-hazardous and inert waste generated by the Proposed Development is more than 1% landfill capacity and for hazardous waste is more than 0.1% of landfill capacity.

5.9 Criteria used to assess the magnitude of impact for inert and non-hazardous waste is provided in **Table Three** and the magnitude of impact for hazardous waste is provided in **Table Four** below:

	Criteria for Inert and Non-Hazardous Waste Magnitude of Impacts
No Change	Zero waste generation and disposal from the Proposed Development
Negligible	Waste generated by the Proposed Development will reduce Expansive Study Area landfill capacity baseline* by <1%
Minor	Waste generated by the Proposed Development will reduce Expansive Study Area landfill capacity baseline* by 1 to 5 %
Moderate	Waste generated by the Proposed Development will reduce Expansive Study Area landfill capacity baseline* by 6 to 10%
Major	Waste generated by the Proposed Development will reduce Expansive Study Area landfill capacity baseline* by >10%

* Forecast as the worst-case scenario, during defined construction and/or operational phase.

***Table Three** - Criteria used to assess the magnitude of impact for inert and non-hazardous waste.*

	Criteria for Hazardous Waste Magnitude of Impacts
No Change	Zero waste generation and disposal from the Proposed Development
Negligible	Waste generated by the Proposed Development will reduce Expansive Study Area landfill capacity baseline* by <0.1%

Minor	Waste generated by the Proposed Development will reduce Expansive Study Area landfill capacity baseline* by 0.1 to 0.5 %
Moderate	Waste generated by the Proposed Development will reduce Expansive Study Area landfill capacity baseline* by >0.5 to 1%
Major	Waste generated by the Proposed Development will reduce Expansive Study Area landfill capacity baseline* by >1%

* Forecast as the worst-case scenario, during defined construction and/or operational phase.

***Table Four** - Criteria used to assess the magnitude of impact for hazardous waste.*

5.10 The effective thresholds and associated significance of effects are described in **Table Five** and **Table Six** below. Waste specific criteria in the IEMA Guidance are used for the assessment. Where significance of effect could fall between two categories (i.e. neutral or slight; slight or moderate), professional judgement has been used to justify and determine which category a receptor falls into, to arrive at a single rating. Where professional judgement has been used, justification has also been provided.

	Magnitude of Impact					
		No Change	**Negligible**	**Minor**	**Moderate**	**Major**
Sensitivity of Receptor	**Very High**	Neutral	Slight	Moderate or Large	Large or Very Large	Very Large
	High	Neutral	Slight	Slight or Moderate	Moderate or Large	Large or Very Large
	Medium	Neutral	Neutral or Slight	Slight	Moderate	Moderate or Large
	Low	Neutral	Neutral or Slight	Neutral or Slight	Slight	Slight or Moderate
	Negligible	Neutral	Neutral	Neutral or Slight	Neutral or Slight	Slight

***Table Five** – Effect Thresholds.*

Effect	Waste
No Neutral	No Significant
Slight	
Moderate	Significant
Large	
Very Large	

Table Six *– Significance of Effects.*

6 Baseline Conditions

Existing Baseline

6.1 There are no safeguarded waste sites identified within the Proposed Development boundary in the Nottinghamshire Waste Local Plan[17].

Landfill Capacity

6.2 The Environment Agency Waste Management information includes waste sent to landfills and remaining landfill capacity are outlined within the Environment Agency's 2024 waste summary tables for England – version 1[18], for non-hazardous and inert waste Expansive Study Area (East Midlands) and the Hazardous Waste Expansive Study Area (England). In summary, the landfill capacity is

- East Midlands total non-hazardous landfill capacity, 30.6 million m^3.
- East Midlands inert landfill capacity, 19.2 million m^3.
- England hazardous landfill, 9.75 million m^3.

6.3 Remaining landfill capacities at the end of 2024 for non-hazardous and inert waste (Expansive Study Area (East Midlands)) and hazardous waste Expansive Study Area (England) is shown in **Table Seven** below.

6.4 The baseline is formed by merchant landfills that operate commercially rather than restricted landfills that deal with their own produced waste. Some non-hazardous landfills have a stable non-reactive hazardous waste (SNRHW) cell e.g. for asbestos

[17] Nottinghamshire and Nottingham Waste Local Plan (2025). Available at chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://www.nottinghamshire.gov.uk/media/o3dfsast/nottinghamshireandnottinghamwlp.pdf . [Accessed 18.01.2026].
[18] Environment Agency's 2024 Waste Summary Tables for England version 1. Available on https://ckan.publishing.service.gov.uk/dataset/2024-waste-data-interrogator/resource/f27f486b-8816-4d81-9f79-d5f27d7553dd . [Accessed on 18.01.2026]

that usually only form a small fraction of the overall capacity. For the purpose of this assessment non-hazardous landfills with SNRHW cells are considered in the same way as non-hazardous landfills.

Landfill Type	East Midlands Landfill capacity ('000s m^3)	England Landfill capacity ('000s m^3)	Point of significance based on a sensitivity of very high m^3
Hazardous merchant	Not applicable, assessment at national level only	9,750	9,750 (0.1% of national landfill capacity)
Non-hazardous with SNRHW cell	15,104	Not applicable, assessment at regional level only	306,220 (1% of national landfill capacity)
Non-hazardous	15,518		
Inert	19,228		192,280 (1% of national landfill capacity)

***Table Seven** - Landfill Capacity (end of 2024) in the East Midlands and England.*

Waste Management Infrastructure

6.5 There are no permitted waste sites located within the Proposed Development boundary. **Table Eight** below shows the tonnage of waste inputs by waste type facility within the East Midlands during 2024.

Facility Type	East Midlands (Tonnes Received)
Landfill	3,377,000
Metal Recycling Site	843,000
On/in Land	282,000
Transfer	4,305,000
Treatment	7,745,000
Combustion	473,000
Incineration	1,313,000
Mining	13,209
Storage	242,214
Processing	178,916

Associated Process	1,814

***Table Eight** - Summary of Waste Inputs by Facility for the East Midlands Region 2024.*

Historic and Authorised Landfills

6.6 There are no authorised landfills recorded within the Proposed Development Order Limits **[REP2-005]**, as outlined in the Environment Agency's Permitted Waste Sites – Authorised Landfill Site Boundaries[19].

6.7 There are no historic landfills recorded within the Proposed Developments Order Limits **[REP2-005]** as outlined in the Environment Agency's Permitted Waste Sites – Historic Landfill Sites[20].

Waste Recovery Targets

6.8 National Target for recovery of Construction and Demolition waste is 70% by weight as set out in the Waste Framework Directive[21] and Waste Management Plan for England[22]. Naturally occurring materials (soils, stones etc) are specifically excluded from the target. Recovery includes reuse, recycling, and other recovery (e.g. energy recovery).

6.9 Good practice landfill diversion target of 90% has been achieved and exceeded by major UK developments as outlined in the IEMA Guidance. A recovery rate of 70% is assumed to be achievable for the purpose of this waste assessment. The applicant is committed to reusing and recycling of solar panels.

6.10 **Table Nine** below illustrates standard, good and best practice recovery percentages for different types of waste material provided by WRAP[23].

Material	Standard Practice Recovery (%)	Good Practice Recovery (%)	Best Practice Recovery (%)
Metals	95	100	100
Packaging	60	85	95

[19] The Environment Agency's Permitted Waste Sites – Authorised Landfill Site Boundaries. Available at: https://www.data.gov.uk/dataset/ad695596-d71d-4cbb-8e32-99108371c0ee/permitted-waste-sites-authorised-landfill-site-boundaries1 [Accessed on 19.01.2026].
[20] The Environment Agency's Permitted Waste Sites – Historic Landfill Sites. Available at https://environment.data.gov.uk/dataset/7a955570-d465-11e4-a37c-f0def148f590 . [Accessed on 19/01/2026].
[21] Waste Framework Directive 2025. Available at https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32025L1892&qid=1760531838376 . [Accessed on 18/01/2025].
[22] Waste Management Plan for England 2021. Available at https://www.gov.uk/government/publications/waste-management-plan-for-england-2021 [Accessed on 18/01/2026].
[23] https://www.wrap.ngo/what-we-do/future-proof-food/reducing-food-waste . [Accessed ON 18/01/2026].

Concrete	75	95	100
Inert	75	95	100
Plastics	60	80	95
Miscellaneous	12	50	75
Electrical equipment	Limited information	70	95
Cement	Limited information	75	95
Liquids and oils	100	100	100
Hazardous	50	Limited information and cannot be 100% because some hazardous waste (i.e. asbestos) must be landfilled.	

***Table Nine** - Standard, good and best practice recovery percentages.*

Future Baselines

6.11 There is no publicly available information regarding any potential changes to landfill capacity by the time of the Proposed Development's construction. Furthermore, due to the cyclic nature of inert landfill capacity (i.e. landfill capacity decreasing , and then new sites or landfill cells being opened with landfill capacity increasing) it is not realistic to forecast future landfill capacity. Therefore, inert and hazardous landfill capacity is assumed to remain the same as the current baseline.

6.12 For non-hazardous waste, using current rate of decline of landfill capacity and forecasting into the future would lead to the conclusion there would be no void space remaining. However, this is not a credible scenario because if there is still a need for landfill, then the waste planning authority will need to consent new landfill capacity to replace any that has been used up. Therefore, non-hazardous and hazardous landfill capacity is assumed to remain the same as the current baseline.

7 Embedded Mitigation

7.1 Mitigation measures have been incorporated into the Proposed Developments design. Through an iterative assessment, potential impacts have been assessed and opportunities to mitigate them identified so they are either prevented or impacts reduced as much as possible. From the outset, potential adverse impacts can be prevented or reduced. Embedded mitigation has taken account of evaluating the significance of potential impacts of the Proposed Development in terms of waste.

7.2 In accordance with the waste hierarchy, the Proposed Development will prioritise waste prevention followed by preparing for reuse, recycling and recovery. Disposal to landfill is a last final choice.

7.3 The waste hierarchy is noted at paragraph 5.15.2 of NPS EN-1 and shown below at **Figure One**.

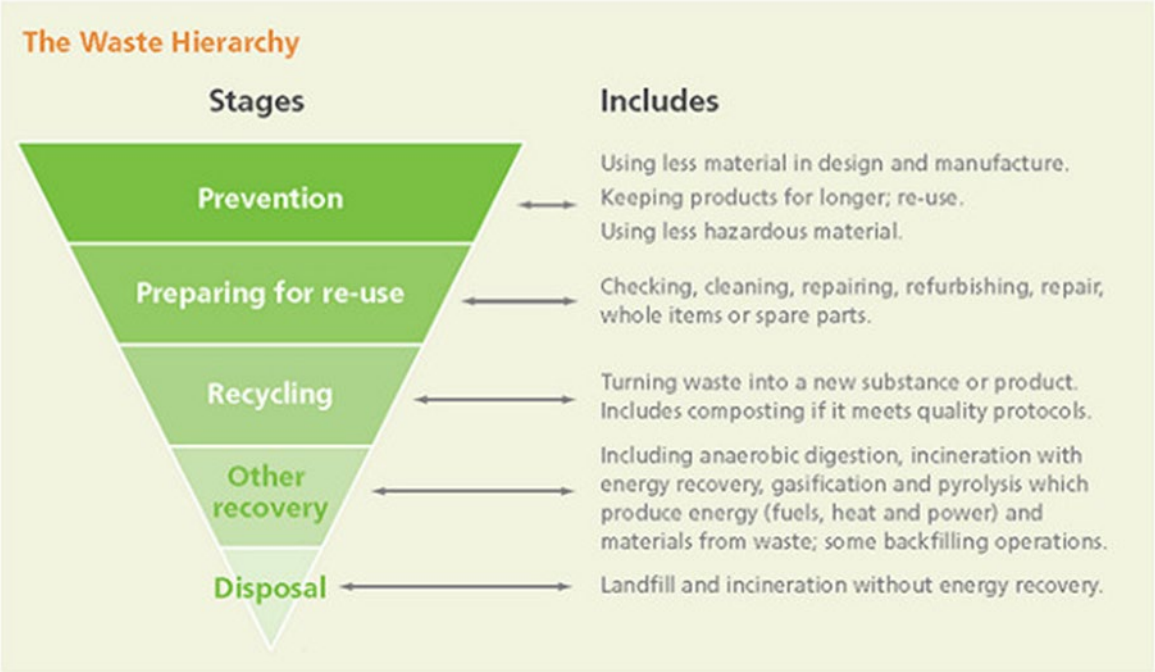

Figure One – Waste hierarchy diagram (Defra Guidance on applying the Waste Hierarchy 2011[24]).

7.4 Waste management will be in accordance with relevant regulations and waste will be transported by licensed waste hauliers to waste management sites that hold the necessary regulatory authorisation and/ or permits for those wastes consigned to them.

7.5 During construction, the Proposed Development will be subject to defined measures and procedures set out within a Construction Environmental Management Plan (CEMP) secured by Requirement 7 of the dDCO **[REP2-007]** building on details provided in the outline Construction Environmental Management Plan (oCEMP) **[APP-089]**. The construction contractor will use the oCEMP to produce their CEMP prior to works commencing on-site.

[24] Defra Guidance on applying the Waste Hierarchy 2011. Available at: chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://assets.publishing.service.gov.uk/media/5a795abde5274a2acd18c223/pb13530-waste-hierarchy-guidance.pdf . [Accessed on 19.01.2026].

7.6 Operation phase of the Proposed Development will be subject to measures and procedures set out within an Operational Environmental Management Plan (OEMP) secured by Requirement 9 of the dDCO **[REP2-007]** building on details provided in the outline Operational Environmental Management Plan (oOEMP) **[APP-092]**. The Applicant will use the oOEMP to produce their OEMP prior to the operation of the Proposed Development.

7.7 Decommissioning phase of the Proposed Development will be subject to measures and procedures defined in the Decommissioning and Restoration Plan secured by Requirement 21 of the dDCO **[REP2-007]** building on details provided in the outline Decommissioning Plan (oDP) **[APP-090]**. The Applicant will use the oDP to produce their Decommissioning and Restoration Plan prior to decommissioning of works on-site.

8 Assessment of Likely Effects

8.1 Changes in available landfill void capacity has the potential to affect waste during construction, operation and decommissioning of the Proposed Development.

Construction

8.2 The types of waste generated during construction is likely to comprise:

- General waste from offices and welfare facilities;
- Small quantities of waste from maintenance of construction vehicles;
- Packaging waste from incoming materials (e.g. cardboard, wood and plastics); and
- Other waste from construction of fencing, internal tracks, substations, construction compounds and other supporting infrastructure.

8.3 Solar panels, mounting structures, inverters, transformers, switchgear and other supporting equipment will be manufactured off-site to specified sizes. Therefore waste generated during installation is anticipated to be minimal.

8.4 Informed by other NSIP schemes, anticipated waste streams from construction are set out in **Table Ten** on the next page:

Waste Type	Estimated Waste Quantity	Recyclable/Recoverable
General from office and or welfare facilities.	Minimal	Yes
Maintenance of construction vehicles	Minimal	Yes
Hazardous Waste (batteries, chemicals, solvents, oils, aerosols)	Minimal	Yes
Wood (i.e. pallets, cable drums)	Approx 41,000 M^3	Yes
Plastic (i.e. packaging and protective foams)	Approx 4,000 M^3	Yes
Paper and Carboard (i.e. packaging)	Approx 31,000 M^3	Yes
Construction Material	Assumed 5% wastage rate (concrete, aggregate, steel etc)	Yes
Solar panel	Assumed 5% failure rate of panels during construction approximately 45m^3 (based on number of panels 0.8 million, standard weight 33.6kg and density of 0.31 tonnes /m3).	Yes

***Table Ten** - Anticipated waste streams from construction.*

8.5 With embedded mitigation measures, overall quantities of construction waste anticipated to be sent to landfill is below 1% of regional inert and non-hazardous landfill capacity and less than 0.1% of national hazardous landfill capacity. The impact is direct and temporary during this phase.

8.6 Where possible excavated material will be reused on site and therefore will not be categorised as a waste. Waste recovery targets do not include excavated material in accordance with the waste hierarchy.

8.7 Land within the Order Limits is relatively flat with large scale earthworks not expected to be required. There is not expected to be either a large surplus or shortfall of fill material requiring export and import to the site. All materials removed will be capable trenching operations or to create working

laydown/compound areas will be reinstated again with no import or export of inert materials.

8.8 Generation of surplus excavated material cannot be ruled out. However, the quantities involved in the context of regional inert and non-hazardous landfill capacity and national hazardous landfill capacity, would not be significant and disposal to landfill as a last resort with preferred options being reuse or deposit for recovery.

8.9 It is concluded significant waste effects are not expected during construction of the Proposed Development.

Operation (including maintenance)

8.10 During operation no permanent staff are expected to be on the Site during the operation of the Proposed Development; rather, there will be frequent visits made by a small number of full time off-site workers whose remit includes the Proposed Development.

8.11 Day-to-day waste arisings during operation will include:

- Welfare facility waste; and
- General waste (paper, carboard, wood etc).

8.12 Management of waste will continue to be in accordance with relevant regulations and transported by licensed waste hauliers to waste management sites who will hold necessary regulation authority and permits for waste they manage.

8.13 Waste generation from maintenance activities is expected to be negligible during operation due to the fact solar panels do not generate any waste as part of the energy production process (nor do batteries in the process of storing energy).

8.14 Maintenance activities that do generate waste during the operational life of the Proposed Development, such as component replacement components, will be managed in the same way as waste from final decommissioning of the Proposed Development.

8.15 Periodic replacement of some solar farm elements is expected during the operational life of the Proposed Development. For the purpose of this assessment it is assumed that one full replacement of solar panels during the operational life will be required as a worse case basis (although it is possible that solar panels could remain operational for the full 40 year operational life of the proposed

development). **Table Eleven** below summarises the design life of expected components of the Proposed Development with key infrastructure and components anticipated to first occur around the 10-year mark with a gradual escalation in replacement activities. Replacements can be concentrated within a brief timeframe or distributed throughout the year.

8.16 Solar panel replacement based on an annual failure rate of 0.05% equates to approximately 45 m^3 of solar panel waste per year. A full replacement of all 0.8 million solar panels is approximately 90,000 m^3 of waste. A full replacement of all 82 BESS containers is 3,485 m3 of waste based on a 20ft container volume of 42.5 m^3.

Component	Indicative Design Life	Recyclable/ Recoverable
Solar Panels	25-40 years	Yes
Inverters	10-20 years	Yes
Racking and Mounting Systems	Not anticipated during the operational life.	Yes
Above Ground Electrical Wiring and Cabling	25-30 years	Yes
Transformers	Not anticipated during the operational life.	Yes
Monitoring and Control Systems	10-20 years	Yes
Batteries	5-15 years	Yes
DC/AC Converter	10-20 years	Yes
Meteorological Sensors	5-15 years	Yes
Substation Equipment	Not anticipated during the operational life.	Yes
Communication Equipment	10-20 years	Yes

***Table Eleven** - Design life of expected components of the Proposed Development.*

8.17 The Applicant's commitment to reuse and recycling as much waste as possible, together with embedded mitigation measures, the overall quantities of operational waste anticipated to be sent to landfill are below 1% of regional inert and non-hazardous landfill capacity and less than 0.1% of national hazardous landfill capacity. This would not be significant and disposal to landfill as a last resort with preferred options being reuse or deposit for recovery.

Decommissioning

8.18 At this stage, based upon similar solar NSIP developments and number of solar panels, anticipated waste streams from the decommissioning phase are set out in **Table Twelve** below.

Waste Type	Estimate Quantity	Recyclable/ Recoverable
General waste from site offices and welfare facilities	Minimal	Yes
Waste from the maintenance of vehicles used in decommissioning	Minimal	Yes
Hazardous waste (e.g. chemicals, batters, solvents, oils, aerosols etc)	Minimal	Yes
Concrete, aggregate, steel	Not currently confirmed but based on construction material quantities for other similar Proposed Developments, they are unlikely required in large quantities.	Yes
Solar PV panels	0.8 million solar panels (approximately 90,000 m^3 of waste).	Yes
Batteries	82 BESS containers (3,485 m3 of waste based on a 20ft container volume of 42.5 m^3).	Yes

***Table Twelve** - Anticipated waste streams from the decommissioning phase.*

8.19 At the present time there are recycling routes available for decommissioning waste materials and there will be greater opportunities for recycling the future that will expand to meet demand as solar PV installations increase.

8.20 "Recycle Solar" [25] based in Scunthorpe, North Lincolnshire, reports 90% of glass and 95% of semiconductor materials in end-of-life solar panels can be extracted for use in new.

[25] Recycle Solar (2026). Available at https://solarrecyclingsolutions.co.uk/solar-panel-recycling/ . Accessed on [1801/2026].

8.21 Lithium-ion battery recycling market is currently under development in the UK. However, electrical vehicle and other Lithium-ion battery use is rapidly increasing. Consequently new investment has been announced and a 80% recovery rate is reported[26].

8.22 The **outline Decommissioning Plan (oDP) [APP-090]** sets out the Applicant is committed to maximising recycling and reuse of the Proposed Development components at the end of their operational life. Organisations, such as PV Cycle[27] and European Recycling Platform[28] already exist around the UK and Europe that specialise in solar recycling and work with solar developers to minimise electrical waste as well as recycle old panels in line with the Waste Electrical and Electronic Equipment (WEEE) Regulations 2025[29]. SECONDSOL[30] provides a marketplace service to purchase and sell second hand PV panels and equipment where a good level of life in the equipment remains. Faulty or damaged panels can be refurbished/repowered by specialist companies/manufactures and resold or reinstalled. The Applicant aims to achieve best practice set out in Solar Power Europe's Lifecycle Quality Best Practice Guidance[31].

8.23 Batteries are contained in the Proposed Development (BESS) and removal of batteries from the WEEE Regulations 2025[32] will be required, as well as the handling, recovery, recycling, or disposal of batteries will be required in accordance with WEEE Regulations 2025[33] and the Waste Batteries and Accumulators Regulations

[26] Lithium-ion batteries (2026. Available at https://www.anernstore.com/blogs/diy-solar-guides/recovery-rates-by-pv-module-type Accessed on 18/01/2025].
[27] PV Cycle (2026). Available at https://pvcycle.org.uk/ . {Accessed on 18.01.2026].
[28] European Recycling Platform (2026). Available at https://erp-recycling.org/ . [Accessed 18.10.2026].
[29] Waste Electrical and Electronic Equipment (WEEE) Regulations (2025). Available at: https://www.gov.uk/guidance/regulations-waste-electrical-and-electronic-equipment . Accessed on [18.01.2026].
[30] SECONDSOL[2026]. Available at: https://www.secondsol.com/en/index.htm [Accessed on 18/01/2026].
[31] Solar Power Europe's Lifecycle Quality Best Practice Guidance [2026]. Available at https://www.solarpowereurope.org/insights/thematic-reports/lifecycle-quality-best-practice-guidelines-version-1-0 .[Accessed 18/01/2026].
[32] Waste Electrical and Electronic Equipment (WEEE) Regulations (2025). Available at: https://www.gov.uk/guidance/regulations-waste-electrical-and-electronic-equipment . [Accessed on 18.01.2026].
[33] Waste Electrical and Electronic Equipment (WEEE) Regulations (2025). Available at: https://www.gov.uk/guidance/regulations-waste-electrical-and-electronic-equipment . [Accessed on 18.01.2026].

2009[34]. At this stand this will likely by undertaken by the battery manufacturer or supplier.

8.24 The Applicant's commitment to reuse and recycling as much waste as possible, together with embedded mitigation measures, the overall quantities of decommissioning waste anticipated to be sent to landfill are below 1% of regional inert and non-hazardous landfill capacity and less than 0.1% of national hazardous landfill capacity. This would not be significant and disposal to landfill as a last resort with preferred options being reuse or deposit for recovery.

9 Cumulative Assessment

9.1 The East Midlands is used as the non-hazardous waste study area because waste may not always be managed within the Waste Planning authority were it is generated. In England, under the Localism Act 2011[35] and section 33A of the Planning and Compulsory Purchase Act 2004[36], there is also a legal duty for local planning authorities to co-operate regarding waste management because waste is a strategic cross boundary issue.

9.2 Cumulative schemes that have been considered in the proposed development for waste are solar farms in Nottinghamshire.

Assumptions and Recovery

9.3 There are two different assumptions regarding recovery rates:

- A "Realistic Worst Case" if a 70% recovery rate, based on current and likely future rates. Recovery is defined as reuse, recycling and recovery (such as energy from waste).
- An "absolute worst case" based on the assumption that all construction and demolition (C&D) waste goes to landfill.

[34] the Waste Batteries and Accumulators Regulations 2009. Available at https://www.gov.uk/guidance/regulations-batteries-and-waste-batteries [Accessed on 18.01.2026]
[35] Localism Act 2011. Available online https://www.legislation.gov.uk/ukpga/2011/20/contents . [Accessed 18.01.2026].
[36] Planning and Compulsory Purchase Act 2004. Available online https://www.legislation.gov.uk/ukpga/2004/5/contents [Accessed 18.01.2026].

9.4 The "absolute worst case" is considered extremely unlikely to occur, and the "realistic worst case" is considered appropriately conservative for the following reasons:

- 2020 C&D recovery rate for the UK was approximately 92.6% exceeding the national target recovery target of 70% recovery and has remained at a similar rate since 2010. A 70% recovery rate is therefore considerably lower than this rate.
- Waste generated by the Proposed Development comprises recyclable materials with existing high recovery rates (concrete and aggregates, metals, plastic, glass, wood, paper and cardboard). PV panels are recyclable and with strong economic as well as regulatory drivers for recycling, it is technically proven and realistic to expect high recovery rates.
- Primary legislation (the Waste Electrical and Electronic Equipment Regulations 2013 [37]and the Waste Batteries and Accumulators (amendment) Regulations 2015[38] places an obligation on producers of electrical and electronic equipment (including PV panels) and batteries to finance collection and recycling of their products. Producers of PV panels and batteries are obligated to join a Producer Compliance Scheme (PCS) to ensure their legal obligations are met.

9.5 Another assumption is that current policy, regulatory and fiscal recycling incentives and thus diverting waste from landfill will be maintained. This is considered to be a realistic worst case for the assessment because:

- Attempts to move away from the current policy framework would be inconsistent with underlying principles of waste management progressively implement over the past 20+ years in addition to the policy objectives of Net ZERO (recycling and recovery have a significant role to play in achieving Net Zero); and
- Any changes in approach from the favoured recycling and recovery would require a large expansion in landfill capacity to accommodate waste that

[37] Waste Electrical and Electronic Equipment (WEEE) Regulations (2025). Available at: https://www.gov.uk/guidance/regulations-waste-electrical-and-electronic-equipment . [Accessed on 18.01.2026].
[38] the Waste Batteries and Accumulators Regulations 2009. Available at https://www.gov.uk/guidance/regulations-batteries-and-waste-batteries [Accessed on 18.01.2026]

was no longer recovered or recycled. In such circumstances, landfill void capacity would no longer be considered a sensitive receptor. Moving away from the favoured recycling and recovery approach to waste disposal without an associated increase in landfill void capacity is not plausible.

Cumulative Impacts

9.6 The cumulative assessment follows the same approach as the Proposed Development set out previously in this report and considers waste generated from other solar PV schemes in Nottinghamshire as set out in **Table Thirteen** . Waste estimates are not available for all projects and estimates have been generated specifically for this assessment by estimating PV module waste based on nominal module capacity (0.65kW) and weight (35kg).

9.7 This cumulative assessment focuses on decommissioning waste because peak of waste generation would be during decommissioning and therefore the worst case in terms of waste generation. Furthermore, large scale interim replacement of PV modules and other components are also covered in the decommissioning phase.

9.8 Operation waste is not concurrent for all projects given their PV modules and other components have different operating periods and it is very unlikely that all facilities would replace their equipment at the same time.

9.9 Other assumptions are all schemes are decommissioned over a single five year period and all waste is non-hazardous.

9.10 Any TCPA schemes were power generated is not confirmed are assumed to be 49.9MW on a worse case basis as no information is available on line.

9.11 The cumulative assessment is presented on the following page:

Cumulative Development (Status)	Size (MW)	PV Panel Waste (tonnes)	Other Waste (tonnes)	Total Waste (tonnes)
West Burton Solar Project (Approved)	480	25,846	47,870	73,716
Cottam Solar Project (Approved)	600	32,308	59,837	92,145
One Earth Solar Farm (Approved)	740	39,846	73,799	113,646
Steeple Renewables project (Examination)	400	21,538	39,892	61,430
Great North Road Solar (Approved)	800	43,077	79,`783	122,860
Development Site to the North of Brick Yard Road, Gamston (Approved)	45.4	2,445	4,528	6,972
Land North West and South of Field Farm, Wood Lane, Sturton-le-Steeple (Wood Lane Solar Farm) (Approved)	49.9	2,687	4,976	7,663
Land North and South of Tuxford Road (Approved)	49.9	2,687	4,976	7,663
Land at Church Farm, Gotham Road, Kingston on Soar (Approved)	49.9	2,687	4,976	7,663
Land North of Stragglethorpe Road, Stragglethorpe Road, Stragglethorpe (Heron Solar Farm) (Approved)	20	1,077	1,995	3,072
Land at M1, Between Junction 25 and 26, Trowell (Pending Consideration)	16.14	861	1,595	2,457
Land at The Grange Cotham Lane, Hawton (Approved)	49.9	2,687	4,976	7,663

Land Adjoining Former High Marnham Power Station (Approved)	43	2,315	4,288	6,604
Land Adjacent to A614 Worksop (Pending Consideration)	40	2,154	3,990	6,144
Land Between Hundred Acre Lane and Red Lane Carlton in Lindrick (Pending Consideration)	33.65	1,722	3,190	4,914
Hamilton Farm, Cauldwell Road, Sutton In Ashfield (Pending Consideration)	6.4	345	638	983
Total	**3,424.19**	**184,282**	**341,309**	**525,595**
Cumulative Waste (assuming all schemes decommissioned within 5yr window)				
Total waste from cumulative schemes (tonnes)		36,856.4	68,261.8	105,119
Total waste from cumulative schemes (m3) (assuming density of 0.31 t/m3 for PV panels and 1.6 t/m3 for other waste)		118,676	109,218	228,108
Waste to landfill, m3 (realistic worst case estimate with 70% recovery)		35,602.8	32,765.4	68,432.4
Waste to landfill, m3 (assuming zero recycling/recovery)		118,676	109,218	228,108
Baseline				
Regional landfill capacity (m3)				30,600,000
Comparison Against Baseline				

% of regional landfill capacity required for Scheme (realistic worst case estimate with 70% recovery		0.116	0.107	0.223
% of regional landfill capacity required for Scheme (assuming zero recycling/recovery)		0.387	0.356	0.745
Assessment				
Receptor Sensitivity				Very High
Realistic Worst Case				
Magnitude of Impact				Negligible
Effect				Slight adverse
Significance				Not significant
Absolute Worst Case				
Magnitude of Impact				Negligible
Effect				Slight Adverse
Significance				Not Significant

Table Thirteen *- Cumulative assessment of the Proposed Development and waste generated from other solar PV schemes in Nottinghamshire.*

9.12 This assessment shows that under realistic worst case (with 70% recovery) cumulative impacts would not be significant (below 1%).

9.13 Absolute worst case assessment (assuming zero recycling/ recovery, would not be realistic due to commitments and regulatory controls) cumulative impacts would not be significant (below 1%).

9.14 For an effect on hazardous landfill capacity to cross the threshold of significance is 0.1% of national capacity (9,750m^3). Assuming the hazardous waste fraction of waste solar panels sent to hazardous waste landfill a significant effect would occur if the hazardous waste fraction represents 12.17% of the solar panel mass. The majority of solar panel components are, however, non-hazardous waste – approximately 76-76% glass, 10-11% plastic, 8-13% aluminium frame and 1% copper wiring and other metals[39]. This equates to 99% of solar panel components classified as non-hazardous waste and 1% considered hazardous waste. 1% of the solar pV waste is 1,186.76 m^3 below 9,750 m^3 (the 0.1% hazardous landfill capacity threshold). For a significant effect to occur 8.2% of solar panel mass would have to be classified as hazardous waste and sent to hazardous waste landfill for disposal, which is not the case.

[39] Materials Breakdown: Where the Value Hides in Old Modules. Available at: https://www.anernstore.com/blogs/diy-solar-guides/pv-module-materials-value#:~:text=Key%20Components%20and%20Their%20Functions%20Glass:%20This,the%20panel%2C%20made%20from%20highly%20purified%20silicon. [Accessed on 19.01.2026].