

**Tillbridge Solar Project
EN010142**

**Volume 6
Environmental Statement
Appendix 6-2 Dust Risk Assessment
Document Reference: EN010142/APP/6.2**

**Regulation 5(2)(a)
Infrastructure Planning (Applications: Prescribed Forms and
Procedure) Regulations 2009**

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1. Dust Risk Assessment

- 1.1.1 This appendix presents the Dust Risk Assessment for the Tillbridge Solar Project ('hereafter referred to as the 'Scheme') undertaken as a qualitative assessment of the impact of construction.
- 1.1.2 The Dust Risk Assessment considers the potential dust emissions magnitude at each stage of the works in conjunction with the sensitivity of the surrounding area. Based on these parameters, the site is classified as low, medium or high risk, and mitigation measures corresponding to the perceived level of risk can then be proposed.
- 1.1.3 The assessment considers the potential dust risk across a set of pre-defined zones, up to 250m from the Scheme (Ref 1). These zones are presented in **Figure 6-2: Dusk Risk Assessment Zones [EN010142/APP/6.3]**.
- 1.1.4 The chosen representative dust risk receptors are shown in **Table 1-1**. Dust receptor locations were chosen representing areas of residential properties. D4, D5 and D7 represent properties to the north of the Order limits D6 and D8 represent properties to the south of the main area of solar panels and D1, D2, D3, D9 and D10 represent properties along the southwest leg of the site (from south to north). All receptors are located within 25m of the Order limits except for D5 at a distance of 230m. The location of these representative receptors are illustrated in **Figure 6-1: Air Quality Baseline Monitoring Locations and Receptors [EN010142/APP/6.3]**.

Table 1-1: Representative Dust Risk Receptors

Receptor ID	X Coordinate	Y Coordinate	Location
D1	481899.7	380246	Wells Lane Cottage
D2	484164.1	381208.8	63 High Street
D3	488211.9	383059.4	2 Normanby Road
D4	490887.9	390708.6	Harpwell Lane
D5	493483.7	389723	Common lane
D6	492013.9	387100	Orchard House
D7	489286.3	390136.6	School Lane
D8	488890.7	387300.4	Cow Lane
D9	487757.3	384584.4	26 High Street
D10	490173.9	385127.8	Ivy Cottage

- 1.1.5 The Dust Risk Assessment is provided in **Table 1-2**. Responses are written in italics.

Table 1-2: Dust Risk Assessment

STEP 1 – SCREENING

1a.	Is a human receptor site within: 350m of Site Boundary	Yes
	50m of the route(s) used by construction vehicles on the public highway, up to 500m from the site entrance(s)	Yes
1b.	Is an ecological receptor site within: 50m of the Scheme	No
	50m of the route(s) used by construction vehicles on the public highway, up to 500m from the site entrance(s)	No

IF ANSWERS TO 1A OR 1B ARE 'YES' COMPLETE 1C AND COMPLETE THE ASSESSMENT

1c.	<p>Provide a description of the proposed demolition and construction activities, their location and duration and any phasing of the development, including:</p> <ul style="list-style-type: none"> • The proximity of receptors; • The specific sensitivity of the receptor(s), e.g. a primary school or hospital; • The duration for which the sources of dust emissions may be close to the sensitive receptors; and • In the case of PM₁₀ the local background concentration. <p><i>Construction is anticipated to commence in 2025 with a peak in 2026, operation to commence in 2028: sources of dust emissions likely to occur during this construction period. The greatest potential for dust effects is likely to occur during the excavation and earthworks phases.</i></p> <p><i>Whilst the Scheme is located in a sparsely populated rural area, there are a number of receptors in proximity to the Scheme that may be affected by the works. This includes high sensitivity receptors such as residential properties, as well as medium sensitivity receptors such as commercial, office, warehouse units and farm buildings.</i></p> <p><i>Defra background maps indicate a typical background PM₁₀ concentration of 15µg/m³ across the Study Area in 2023 (Ref 2). This is well below the annual average objective value (40µg/m³).</i></p>
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STEP 2 – ASSESS THE RISK OF DUST IMPACTS		
STEP 2A – Define the Potential Dust Emission Magnitude		
DEMOLITION PHASE		
2a(i)	Is the volume of demolition:	
	Large <ul style="list-style-type: none"> • Total volume of building to be demolished (>50,000 m²); or • Potential dusty construction material (e.g. concrete); or • On-site crushing and screening; or • Demolition activities >20m above ground level. 	N/A
	Medium <ul style="list-style-type: none"> • Total volume of building to be demolished 20,000 m³ – 50,000m³; or • Potential dusty construction material; or • Demolition activities 10-20 m above ground level. 	N/A
	Small <ul style="list-style-type: none"> • Total volume of building to be demolished <20,000 m³; or • Construction material with low potential for dust release (e.g. metal cladding or timber); or • Demolition activities <10m above ground level and demolition during wetter months. 	N/A
EARTHWORKS PHASE		
2a(ii)	Is the scale of the earthworks:	
	Large <ul style="list-style-type: none"> • Total area of earthworks on site is >10,000m²; or • Potentially dusty soil type (e.g. clay, which will be prone to suspension when dry due to small particle size); or • >10 heavy earth moving vehicles active at any one time on-site; or • Formation of stockpile enclosures >8m in height; or • Total material moved >100,000 tonnes (where known). 	N/A
	Medium <ul style="list-style-type: none"> • Total area of earthworks on site is 2,500 m²-10,000 m²; or • Moderately dusty soil type (e.g. silt); or • 5-10 heavy earth moving vehicles active at any one time on-site; or • Formation of stockpile enclosures 4-8m in height; or 	N/A

	<ul style="list-style-type: none"> Total material moved 20,000-100,000 tonnes (where known). 	
	<p>Small</p> <ul style="list-style-type: none"> Total area of earthworks on site is <2,500 m²; or Soil type with large grain size (e.g. sand); or <5 heavy earth moving vehicles active at any one time onsite; Formation of stockpile enclosures <4min height; or Total material moved <10,000 tonnes (where known), or earthworks during wetter months. 	<p><i>Yes – due to the small area of earthworks, no heavy earth moving vehicles and small stockpiles.</i></p>
CONSTRUCTION PHASE		
2a(iii)	Is the scale of the works:	
	<p>Large</p> <ul style="list-style-type: none"> Total building volume >100,000 m²; or Piling; or On-site concrete batching; or Sandblasting. 	N/A
	<p>Medium</p> <ul style="list-style-type: none"> Total building volume 25,000 m³-100,000 m³; or Potentially dusty construction material (e.g. concrete); or On-site concrete batching. 	N/A
	<p>Small</p> <ul style="list-style-type: none"> Total building volume <25,000 m³; or Construction material with low potential for dust release (e.g. metal cladding or timber); or Building constructed from pre-assembled units. 	<p><i>Yes – due to small building volume and pre-assembled materials.</i></p>
TRACKOUT		
2a(iii)	Only receptors within 50m of the route(s) used by vehicles on the public highway and up to 500m from the site entrance(s) are considered to be at risk from the effects of dust. Will the trackout be:	
	<p>Large</p> <ul style="list-style-type: none"> >50 Heavy Duty Vehicle (HDV; >3,5t) outward movements in one day; Potentially dusty surface material (e.g. high clay/silt content); or Unpaved road length >100m. 	<p><i>Yes – due to use of unpaved routes.</i></p>
	<p>Medium</p> <ul style="list-style-type: none"> 10-50 HDV (>3,5t) outward movements in any one day; Moderately dusty surface material (e.g. high clay content); or 	N/A

	<ul style="list-style-type: none"> Unpaved road length 50-100m (high clay content) 	
	Small <ul style="list-style-type: none"> <10 HDV (>3.5t) trips in any one day; Surface material with low potential for dust release; or Unpaved road length <50m. 	N/A

STEP 2B – Define the Sensitivity of the Area

Define the Receptor Sensitivity		
2b(i)	Sensitivity of People to Dust Soiling Effects	
	Is the location a:	
	High sensitivity receptor <ul style="list-style-type: none"> Locations where users can reasonably expect enjoyment of a high level of amenity; or Appearance, aesthetics or value of property would be diminished by soiling; or People / property would reasonably be expected to be present continuously, or at least regularly for extended periods, as part of the normal pattern of use of the land e.g. residential dwellings, museums, medium/long-term car parks, car showrooms. 	Y
	Medium sensitivity receptor <ul style="list-style-type: none"> Locations where users would expect to enjoy a reasonable level of amenity, but would not reasonably expect to enjoy the same level of amenity as in their home; or Appearance, aesthetics or value of property could be diminished by soiling; or People or property wouldn't reasonably be expected to be present here continuously or regularly for extended periods as part of the normal pattern of use of the land e.g. parks and places of work. 	N/A
	Low sensitivity receptor <ul style="list-style-type: none"> Enjoyment of amenity would not reasonably be expected; or Property would not reasonably be expected to be diminished in appearance, aesthetics or value by soiling; or There is transient exposure, where the people or property would reasonably be expected to be present only for limited periods of time as 	N/A

	part of the normal pattern of use of the land e.g. playing fields, farmland (unless commercially-sensitive horticultural), footpaths, short term car parks and roads.	
2b(ii)	Sensitivity of People to Health Effects of PM ₁₀	
	Is the location a:	
	<p>High sensitivity receptor</p> <ul style="list-style-type: none"> Locations where members of the public are exposed over a time period relevant to the 24-hour objective for PM₁₀ (a relevant location would be where individuals may be exposed for 8 hours or more in a day). e.g. residential dwellings, schools, residential care homes. 	Y
	<p>Medium sensitivity receptor</p> <ul style="list-style-type: none"> Locations where the people exposed are workers, and exposure is over a time period relevant to the 24-hour objective for PM₁₀ (a relevant location would be where individuals may be exposed for 8 hours or more in a day). e.g. office and shop workers, generally excludes workers occupationally exposed to PM₁₀, as protection is covered by Health and Safety at Work legislation. 	N/A
	<p>Low sensitivity receptor</p> <ul style="list-style-type: none"> Locations where human exposure is transient, e.g. public footpaths, playing fields, parks and shopping streets. 	N/A
2b(iii)	Sensitivity of Receptors to Ecological Effects	
	Is the location a:	
	<p>High sensitivity receptor</p> <ul style="list-style-type: none"> Locations with an international or national designation and the designated features may be affected by dust soiling; or Locations where there is a community of a particularly dust sensitive species such as vascular species included in the Red Data List For Great Britain. Indicative examples include a Special Area of Conservation (SAC) designated for acid heathlands or a local site designated for lichens adjacent to the demolition of a large site containing concrete (alkali) buildings. 	N/A
	Medium sensitivity receptor	N/A

	<ul style="list-style-type: none"> • Locations where there is a particularly important plant species, where its dust sensitivity is uncertain or unknown; or • Locations with a national designation where the features may be affected by dust deposition. • Indicative example is a Site of Special Scientific Interest (SSSI) with dust sensitive features. 	
	<p>Low sensitivity receptor</p> <ul style="list-style-type: none"> • locations with a local designation where the features may be affected by dust deposition. • indicative example is a local Nature Reserve with dust sensitive features. 	N/A

Sensitivity of Receptors to Ecological Effects:
 An 'ecological receptor' refers to any sensitive habitat affected by dust soiling. This includes the direct impacts on vegetation or aquatic ecosystems of dust deposition, and the indirect impacts on fauna (e.g. on foraging habitats). For locations with a statutory designation, e.g. Special Areas of Conservation (SACs) and Sites of Special Scientific Interest (SSSIs), consideration should be given as to whether the particular site is sensitive to dust and this will depend on why it has been designated. Some non-statutory sites (i.e. local wildlife sites) and/or locations with very specific sensitivities may also be considered if appropriate.

Receptors relating to dust soiling and human health were identified within the search radius, and therefore must be considered in the assessment.

There is one Ancient Woodland site (Burton Wood) located 550m of the Scheme. This is over 350m from the Order limits. Site access points of the Cable Route Corridor are over 500m from any ecological receptors. No ecological sites will be considered further in this assessment.

Estimate the distance of the closest buffer with receptors to the Scheme:

There are residential dwellings within 20m of the Scheme, with additional receptors within the full 350m buffer.

Combined Sensitivity of the area for Dust Soiling Effects:

HIGH Sensitivity: The presence of high sensitivity receptors (i.e. residential dwellings) within 20m of the Order limits results in a combined HIGH sensitivity for Dust Soiling Effects.

Combined Sensitivity of the area to Human Health Impacts:

MEDIUM Sensitivity: Annual mean PM₁₀ concentrations of <24 across the Study Area in conjunction with the presence of highly sensitive receptors within 20m of the Order limits results in a combined MEDIUM sensitivity for Human Health Impacts.

Combined Sensitivity of the area to Ecological Impacts:

N/A Sensitivity: There are no nationally designated sites or potentially sensitive ecosystems situated within 500m of the Order limits, therefore ecological impacts have not been assessed.

- 1.1.6 Using the IAQM matrix tables, shown in **Table 1-3**, **Table 1-4** and **Table 1-5**, to assess the area sensitivity and the potential dust emission magnitude, a level of risk can be determined for potential impact of each construction phase. This has been undertaken with the required good practice measures in place.

Table 1-3: Risk of dust emissions from earthworks

Sensitivity of the Area	Dust Emission Magnitude		
	Large	Medium	Small
High	High Risk	Medium Risk	Low Risk
Medium	Medium Risk	Medium Risk	Low Risk
Low	Low Risk	Low Risk	Negligible

Table 1-4: Risk of dust emissions from construction

Sensitivity of the Area	Dust Emission Magnitude		
	Large	Medium	Small
High	High Risk	Medium Risk	Low Risk
Medium	Medium Risk	Low Risk	Negligible
Low	Low Risk	Low Risk	Negligible

Table 1-5: Risk of dust emissions from trackout

Sensitivity of the Area	Dust Emission Magnitude		
	Large	Medium	Small
High	High Risk	Medium Risk	Low Risk
Medium	Medium Risk	Medium Risk	Low Risk
Low	Low Risk	Low Risk	Negligible

1.1.7 The overall risk of dust effect is provided in **Table 1-6**. The risk of dust soiling effects and human health effects are both low risks, with the implementation of mandatory good practice measures for a “high risk” site. This leads to the overall risk from dust for the Scheme to be identified as **low risk**.

Table 1-6: Summary dust risk table

Potential Impact	Risk			
	Demolition	Earthworks	Construction	Trackout
Dust Soiling	N/A	Low Risk	Low Risk	Low Risk
Human Health	N/A	Low Risk	Low Risk	Low Risk
Ecological	N/A	N/A	N/A	N/A

2. References

- Ref 1 Institute of Air Quality Management (IAQM) (2024). Guidance on the assessment of dust from demolition and construction. Institute of Air Quality Management. Available at: [REDACTED]
[Accessed 25 January 2024]
- Ref 2 Defra (2024). Background Mapping data for local authorities. Available via: <https://uk-air.defra.gov.uk/data/laqm-background-maps?year=2018>[Accessed 19 January 2024]