

Stonestreet Green Solar

Environmental Statement

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Chapter 9: Biodiversity

Appendix 9.6: Biodiversity Air Quality Screening Report

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Biodiversity Air Quality Screening Report: Stonestreet Green Solar

June 2024



Experts in air quality
management & assessment

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1 Introduction

- 1.1 This Biodiversity Air Quality Screening Report has been prepared on behalf of EPL 001 Limited ('the Applicant') to assess the potential for air quality effects on biodiversity and designated sites in relation to the Development Consent Order ('DCO') application for Stonestreet Green Solar ('the Project'), near Ashford, Kent. It considers traffic emissions during the construction phase.

The Project

- 1.2 The Project comprises the construction, operation, maintenance, and decommissioning of solar photovoltaic ('PV') arrays and energy storage, together with associated infrastructure and an underground cable connection to the existing National Grid Sellindge Substation.
- 1.3 The Project will include a generating station (incorporating solar arrays) with a total capacity exceeding 50 megawatts ('MW'). The agreed grid connection for the Project will allow the export and import of up to 99.9 MW of electricity to the grid. The Project will connect to the existing National Grid Sellindge Substation via a new 132 kilovolt ('kV') substation constructed as part of the Project and cable connection under the Network Rail and High Speed 1 ('HS1') railway.
- 1.4 The location of the Project is shown on **ES Volume 3, Figure 1.1: Site Location Plan (Doc Ref. 5.3)**. The Project will be located within the Order limits (the land shown on the **Works Plans (Doc Ref. 2.3)** within which the Project can be carried out). The Order limits plan is provided as **ES Volume 3, Figure 1.2: Order Limits (Doc Ref. 5.3)**. Land within the Order limits is known as the 'Site'.

Purpose and Scope of this Report

- 1.5 This report considers the potential for air quality effects on biodiversity associated with road traffic generated during construction of the Project. Road traffic can emit nitrogen oxides ('NO_x') and ammonia ('NH₃'), and some sensitive vegetation may be affected by elevated concentrations of these pollutants. The deposition of nitrogen from both NO_x and ammonia can also alter the nutrient and acidity balance of some ecosystems, causing changes to their composition and health.
- 1.6 Once construction is complete, the operational and maintenance traffic associated with the Project will be minimal (estimated to be 2 two-way light duty vehicle movements per day on average). This is much less than the traffic during the construction phase. Where the construction-phase emissions have no significant effects, it can thus also be concluded that the operational and maintenance traffic

will have no significant effects. Electric vehicles and those powered by fuel cells have no local emissions of either NO_x or NH₃. While the precise composition of the future UK vehicle fleet is unknown, it is nevertheless reasonably expected that any traffic emissions associated with decommissioning will be smaller than those associated with its construction. Where the construction-phase emissions have no significant effects, it can thus also be concluded that the decommissioning phase will have no significant effects.

- 1.7 This report therefore considers the potential effects of emissions from construction traffic albeit any effects will be temporary. **ES Volume 3, Figure 13.1: Construction Traffic Route and Traffic Data Location Plan (Doc Ref. 5.3)** shows the location of the Project and the construction routes to be used. The construction routing will be secured through an **Outline CTMP (Doc Ref. 7.9)**. As secured within a Requirement of the **Draft Development Consent Order (Doc Ref. 3.1)**, no phase of the construction of the authorised development may be commenced until a CTMP for that phase has been submitted to and approved by the local planning authority, such approval to be in consultation with the relevant highway authority and the CTMP for each phase of the authorised development must be in accordance with the outline CTMP. Construction traffic will access the Site from the nearby Junction 10A of the M20, and travel along the A20 Hythe Road and Station Road. Much of the equipment being transported to the Site will ultimately enter the UK from major ports. Given the proximity of the ports of both Dover and Folkstone, it is likely that materials will arrive from the east, but other ports in the region might also be accessed via the M20 to the north such as Port of London, Felixstowe and Southampton. There is the potential for construction traffic to use the M20 in either direction.
- 1.8 **ES Volume 3, Figure 9.1: Location of Statutory Designated Sites (Doc Ref. 5.3)** shows the locations of nationally and internationally designated sites in the area, while **ES Volume 3, Figure 9.2: Locations of Local Wildlife Sites (Doc Ref. 5.3)** shows the locations of nearby local wildlife sites and **ES Volume 3, Figures 9.3: Locations of Ancient Woodland Sites (Doc Ref. 5.3)** shows nearby ancient woodlands. This report considers the potential for adverse effects of emissions from construction traffic on all of these sites.

2 Assessment Criteria

- 2.1 Legislation and planning policy to protect and enhance biodiversity is described in **ES Volume 4, Appendix 9.1: Legislation, Planning Policy and Guidance (Doc Ref. 5.4)** and is not repeated here. This section focuses on key guidance which allows the assessment of air quality effects on sensitive ecosystems.
- 2.2 Nitrogen and acid deposition are long-term processes which take place over multiple years. Short-term events are less relevant to ecosystem health. The relevant critical loads¹ for nitrogen and acid deposition thus relate to annual averages. Similarly, the key critical levels² for ambient pollution concentrations which have been set to protect biodiversity also relate to annual averages¹.

JNCC Guidance

- 2.3 The Joint Nature Conservation Committee ('JNCC') has published Decision-Making Thresholds ('DMTs') for air pollution³ ('JNCC guidance'). The thresholds define changes caused by individual projects (i.e. not in combination with other projects and plans) which can be discounted as not significant without additional work. The DMT for road traffic is set at 0.15% of the existing Annual Average Daily Traffic ('AADT') on roads within 200 m of a relevant designated site (sections 5.5 and 5.6 of the JNCC guidance³). No further assessment is needed whenever a development generates less traffic than this. Further work is needed (such as using the criteria described subsequently in this section) where the criterion is exceeded.
- 2.4 The JNCC guidance makes clear that the study area for the assessment of impacts from road traffic should not extend more than 10 km from a plan boundary (section 5.5 of the JNCC guidance³), and furthermore that impacts alongside the Strategic Road Network (SRN)ⁱⁱ only require consideration for road infrastructure schemes (section 5.6 of the JNCC guidance³). This reflects the fact that development-generated traffic which reaches the SRN is likely to be broadly similar irrespective of precisely where in a region that development is located. Such traffic growth is thus more effectively considered at a strategic level than in individual planning decisions.

ⁱ For sulphur dioxide, there is also a critical level for 'winter mean' concentrations. Road transport is no longer a significant source of sulphur emissions and this does not need to be considered. For nitrogen oxides an additional critical level relates to 24-hour mean concentrations, however it is common practice to omit this criterion with respect to effects from road traffic.

ⁱⁱ The SRN is the most heavily used part of the national road network, carrying a third of all traffic and two-thirds of all freight.

National Highways Guidance

- 2.5 National Highways (then Highways England) issued guidance on the assessment of air quality impacts caused by National Highways road schemes as part of its Design Manual for Roads and Bridges ('DMRB'). The current version of this guidance is LA 105⁴. DMRB LA105⁴ (parts of which replace what was previously Section 11.3.1 of DMRB) states (e.g. in paragraphs 2.1 and 2.8) that the air quality impacts of each individual project should be scoped out from any further assessment where the changes caused by the project in isolation (i.e. not in combination with other plans or projects) do not meet any of the following criteria within 200 m of a designated site:
- annual average daily traffic ('AADT') $\geq 1,000$; or
 - heavy duty vehicle ('HDV') AADT ≥ 200 ; or
 - a change in speed band; or
 - a change in carriageway alignment by ≥ 5 m.

Natural England Guidance

- 2.6 Natural England's guidance on advising competent authorities on the assessment of road traffic emissions under the Habitats Regulations⁵ recommends the use of the DMRB criteria (see paragraph 2.5 of this report) for changes to traffic caused by all types of plans or projects, and not just for highways schemes (e.g. paragraphs 4.23 to 4.25 of Natural England's guidance⁵). It explains:
- "the AADT thresholds ... are considered by Natural England's air quality specialists ... to be suitably precautionary, as any emissions below this level are ... considered to be imperceptible".* It goes on: *"There can therefore be a high degree of confidence in [the use of these criteria] to screen for risks of an effect"* (page 18⁵).
- 2.7 Natural England⁵ further explains that the AADT criteria have *"been adopted here to simply help trigger when to look further where traffic projection data is the sole means of assessment – [triggering the criteria] does not immediately mean there will be an effect"* (page 18⁵).
- 2.8 A key difference between how these AADT criteria are applied by Natural England⁵ and National Highways⁴ is that Natural England suggests that they should be applied first to the change caused by each individual project and then to the changes caused by relevant plans and projects in combination with one another.
- 2.9 Natural England⁵ provides guidance on which plans and projects should be considered within an in-combination assessment for European sites. It explains

that this “*is restricted to plans and projects which are ‘live’ at the same time as the assessment being undertaken. These can potentially include:*

- *The incomplete or non-implemented parts of plans or projects that have already commenced;*
- *Plans or projects given consent or given effect but not yet started;*
- *Plans or projects currently subject to an application for consent or proposed to be given effect;*
- *Projects that are the subject of an outstanding appeal;*
- *Ongoing plans or projects that are the subject of regular review and renewal;*
- *Any draft plans being prepared by any public body;*
- *Any proposed plans or projects that are reasonably foreseeable and/or published for consultation prior to application.” (paragraph 4.44⁵)*

2.10 Natural England also explains that an exhaustive search for live plans or projects which could potentially fall within the scope of an ‘in-combination’ assessment is not necessary:

“it is Natural England’s view that staff in a competent authority can apply their professional judgment when considering this. It might be that a pragmatic approach to identifying the most pertinent ones may be required from the competent authority. It might be reasonable to initially limit a search to those plans and projects which are of most direct relevance to the subject plan or project under HRA (i.e. the likelihood of that plan or project’s effects impacting upon the same site in-combination with the proposed plan or project). This may be those which are simply the closest to the site or within a certain distance from it, or the most influential in nature.” (paragraph 4.48⁵)

2.11 Natural England also stresses that, at the screening stage, the competent authority must “*remember that the subject plan or project remains the focus of any in-combination assessment. Therefore, it is Natural England’s view that care should be taken to avoid unnecessarily combining the insignificant effects of the subject plan or project with the effects of other plans or projects which can be considered significant in their own right... it is only the appreciable effects of those other plans and projects that are not themselves significant alone which are added into an in-combination assessment with the subject proposal.” (paragraph 4.47⁵)*

IAQM Guidance

- 2.12 The Institute for Air Quality Management (IAQM) issued a guide to the assessment of air quality impacts on designated nature conservation sites in 2020 ('IAQM guidance')⁶. The 2020 IAQM guidance recommends the use of the DMRB criteria as described in paragraph 2.5 of this report, noting that they should be applied to changes in traffic caused by the development alone as well as in combination with other projects, as recommended by Natural England (e.g. paragraph 3.3⁶). It also suggests that the same overall assessment method should be applied regardless of the designation (e.g. paragraph 1.3.1⁶).
- 2.13 In practice, the requirement to consider air quality impacts in combination with those of other projects is not usually taken as a requirement for local wildlife sites or ancient woodlands. However, for ease of reporting, this report takes the worst-case approach of applying the same assessment approach to all site designation types, including locally-designated sites. This includes consideration of impacts both alone and in combination with other projects.

3 Assessment

Required Study Area

3.1 As explained in paragraph 2.4 of this report, based on the JNCC guidance, traffic on the M20 does not require consideration in this assessment as this forms part of the SRN. The only designated sites which require consideration are thus those within 200m of the construction routes (i.e. Roman Road, Goldwell Lane, Station Road, and the A20 Hythe Road). Most of the designated sites are more than 200 m from any of these affected roads. The only designated sites within 200 m of an affected road and which thus require assessment are:

- Hatch Park SSSI, which at its closest is approximately 20 m from the A20 Hythe Road.
- Adlington Sand Pit Local Wildlife Site ('LWS'), which at its closest is approximately 55 m from the Site boundary and may be within 200 m of the internal haulage road.

3.2 Nevertheless, as explained in paragraph 3.7, below, because of the small volumes of generated traffic during the construction stage of the Project, there would also be no significant effects if there were designated habitats sites alongside any of the identified construction routes.

Effects of the Development Alone

3.3 Prime Transport Planning (the Project transport consultant) has provided predicted construction traffic generation figures set out in Table 3.1. These are AADT figures which relate to the average construction and construction worker traffic volumes.

3.4 The traffic generation figures in Table 3.1 can be compared with the screening criteria of 1,000 AADT for all traffic and 200 AADT for HDVs recommended by National Highways (Paragraph 2.5), Natural England (Paragraph 2.6) and IAQM guidance (Paragraph 2.12). All of the predicted trip generation figures are well below the relevant screening criteria. Development trips on the internal haulage road (off-road) will also be reflected in the values in Table 3.1 and will thus be well below the 1,000 and 200 AADT criteria. Impacts of the Project alone will thus not be significant.

3.5 The JNCC guidance 0.15% criterion (see Paragraph 2.3) is exceeded along all roads. There is therefore a requirement to consider impacts in combination with other projects.

Table 3.1: Project -Generated Construction Traffic and Existing^a Baseline Flows (AADT total traffic)^b

Road	2022 Observed Flows ^b	Project Construction Trip Generation		Project Traffic as % of Existing
		HDVs	All Vehicles	
ATC 1: Station Road (south of A20 Hythe Road)	3,837	32	108	3%
ATC 2: Station Road (South of Railway)	2,781	32	108	4%
ATC 3: Station Road (North of Calleywell Lane)	2,757	2	12	0%
ATC 4: Goldwell Lane (South of Calleywell Lane)	945	2	12	1%
ATC 5: Goldwell Lane (North of Roman Road)	911	2	12	1%
ATC 6: Roman Road	317	12	38	12%
DfT: A20 (near Hatch Park) 2019^c	10,728	32	108	1%

^a Existing Baseline Data are Provided to allow the assessment required by JNCC Guidance (section 5.6)3

^a Provided by Prime Transport Planning.

^b DfT A20 data are for 2019.

Effects In Combination

3.6 Prime Transport Planning has identified the cumulative developments listed in Table 3.2 as being relevant with respect to potential traffic generation during the construction phase. These are considered to also fulfil the requirements of Natural England (paragraphs 2.9 to 2.11 of this document) regarding effects of the Project ‘in-combination with other plans and projects’. Prime Transport Planning has subsequently predicted the AADT traffic generation associated with each of these cumulative developments, which are summarised in Table 3.3. There will be no traffic from cumulative schemes on the internal haulage road and thus the total in-combination traffic will be the same as the that for the Project alone.

3.7 The traffic generation figures in Table 3.3 can be compared with the screening criteria of 1,000 AADT for all traffic and 200 AADT for HDVs recommended by National Highways (paragraph 2.5 of this document), Natural England (paragraph

2.6 of this document) and IAQM guidance (paragraph 2.12 of this document). All of the predicted flows, of the Project in combination with other cumulative schemes, are well below the relevant screening criteria.

- 3.8 The potential for significant effects on any biodiversity site can thus be discounted. There is no likely significant effect from construction-phase road traffic emissions.

Table 3.2: Cumulative Schemes Considered Explicitly

Project	Description
Pivot Power Battery Storage PA/2022/2544 Full Planning Application (Approved with Conditions 04/08/2023)	The laying out of a battery storage facility, intermediate substation, cabling, fencing, access tracks and associated drainage infrastructure on field to west of National Grid Sellindge Converter Substation.
Land north of 1, Church View, Aldington, Kent 19/00895/AS Full Planning Application (Under Consultation)	Residential development consisting of 6 dwellings with associated accesses, garaging and parking areas, with land to provide open space and agricultural field access. Ecological receptor site and wetland.
Land south west of Goldwell Court, Goldwell Lane 20/00652/AS Full Planning Application (Delegated Decision pending)	Erection of 11 dwelling houses comprising a terrace of two-bed cottages, two pairs of three-bed houses and three detached four-bed houses together with access, parking, surface water attenuation pond and associated landscaping (including provision of open space) and agricultural field access.
East Stour Solar Farm 22/00668/AS Full Planning Application (Refused April 2024 – retained for assessment due to likelihood of appeal)	Installation of a solar farm with a generating capacity of up to 49.9MW comprising: ground mounted solar panels; access tracks; inverter/transformers; substation; storage, spare parts and welfare cabins; underground cables and conduits; perimeter fence; CCTV equipment; temporary construction compounds; and associated infrastructure and planting scheme.
Walsh Power Condenser Project PA/2022/2950 Approved 16/08/2023	Erection of a synchronous condenser plant with ancillary infrastructure, access, landscaping and other incidental works.

Table 3.3: In-Combination Traffic Generation (AADT)^a

Road	Project related AADT			Cumulative Schemes AADT			Total AADT		
	LD V	HD V	Total	LD V	HD V	Total	LD V	HD V	Total
ATC 1: Station Road (south of Hythe Road)	76	32	108	56	0	56	132	32	164
ATC 2: Station Road (South of Railway)	76	32	108	56	0	56	132	32	164
ATC 3: Station Road (North of Calleywell Lane)	10	2	12	56	0	56	66	2	68
ATC 4: Goldwell Lane (South of Calleywell Lane)	10	2	12	56	0	56	66	2	68
ATC 5: Goldwell Lane (North of Roman Road)	10	2	12	56	0	56	66	2	68
ATC 6: Roman Road	26	12	38	0	0	0	26	12	38
DfT: A20 (near Hatch Park) 2019	76	32	108	123	71	193	199	103	301

^a Provided by Prime Transport Planning.

4 Conclusion

- 4.1 Notwithstanding that the effects of the Project on traffic flows will be temporary, a worst-case approach has been taken of assessing the expected traffic generation in the same way as would be done if it were permanent. This has shown that:
- There are only two designated sites (Hatch Park SSSI and Adlington Sand Pit LWS) within 200 m of any relevant affected road; and
 - The level of traffic generation on all roads, both alone and in combination with that of other relevant projects, is well below worst-case screening criteria which have been set to protect designated sites.
- 4.2 On this basis it can be concluded that there will be no significant effects on any designated biodiversity site from traffic-related emissions associated with the Project.
- 4.3 Any effects during the operation and decommissioning phases will be smaller than during the construction phase. It can therefore be concluded that there will be no significant effects from road traffic during construction, operation and decommissioning.
- 4.4 There is no likely significant effect from road traffic emissions.

References

- ¹ German Environment Agency (2022) Review and revision of empirical critical loads of nitrogen in Europe.
- ² Air Pollution Information System (2023) published online by the UK Centre for Ecology and Hydrology
- ³ Chapman, C., and Kite, B. (2021) Guidance on Decision-Making Thresholds for Air Pollution. JNCC, Peterborough 2021. JNCC Report No. 696 ISSN 0963 8091.
- ⁴ Highways England (2019). Design Manual for Roads and Bridges LA 105 Air Quality Revision 0
- ⁵ Natural England (2018) Natural England's approach to advising competent authorities on the assessment of road traffic emissions under the Habitats Regulations (NEA001)
- ⁶ IAQM, 2020. A guide to the assessment of air quality impacts on designated nature conservation sites. IAQM. Version 1.1