

Tween Bridge Solar Farm

A Nationally Significant Infrastructure Project in the Energy Sector

Preliminary Environmental Information Report

Technical Appendix 12.1 – Transport Statement

October 2023



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PEGASUS GROUP

Draft Transport Statement.

Tween Bridge Solar Farm.

On behalf of RWE Renewables. Date: August 2023 | Pegasus Ref: P21-3484 TR01



Document Management.

Version	Date	Author	Checked/ Approved by:	Reason for revision
DRAFT	August 2023	LT	AS/KS	-
DRAFT V.1	September 2023	КS	КS	Updated to reflect changes to PEIR



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Figure 2.1 – Site Location Plan



1. Introduction

- 1.1. This Draft Transport Statement (TS) has been prepared by Pegasus Group on behalf of RWE Renewables (The Applicant) in order to address the traffic and transportation issues associated with the construction, operation, maintenance and decommissioning of a ground mounted solar park with an intended design capacity of over 50MWp (megawatts peak), and a battery energy storage facility with an export/import connection to the National Grid. The cable route for the grid connection and the above ground works needed for connection to a proposed substation are also considered (referred to within this document as "the Scheme"). Further details of the proposal and the technology used together with the proposed Scheme layout are provided separately as part of the DCO documentation.
- 1.2. The Scheme is located within the Yorkshire and Humber regions. The site extends to over 1500 hectares, centred at approximately 10 kilometres to the northeast of Doncaster and 14 kilometres to the west of Scunthorpe. From the largest development parcel, Junction 5 of the M18 is approximately 2.5 kilometres to the west and Junction 1 of the M180 is approximately four kilometres to the southwest.
- 1.3. Due to the size of the Scheme and the number of associated land parcels, access during the construction and operational phases will be provided in a number of locations.
- 1.4. The TS sets out the potential effects of the development proposals in transport terms. The report has been prepared in accordance with National Planning Practice Guidance (NPPG).
- 1.5. Solar farms are associated with very few vehicle movements once operational with the majority of movements occurring during the construction phase. As such, this TS is supported by a draft Outline Construction Traffic Management Plan (OCTMP).
- 1.6. The site is split across the highway authorities of Doncaster Council (DC) and North Lincolnshire Council (NLC). Pre-application discussions have been held with officers at DC, NLCC and National Highways, as appropriate, and this is ongoing. The following key transport issues are therefore addressed in detail in this report:
 - Chapter 2 describes the existing site and the local area.
 - Chapter 3 sets out the development proposals.
 - Chapter 4 considers the effect of the development in transport terms.
 - **Chapter 5** considers the development in the context of national and local policy guidance.
 - Chapter 6 provides a summary and conclusion to the report.



2. Scheme Context

- 2.1. The Scheme is centred at approximately 10 kilometres to the northeast of Doncaster and 14 kilometres to the west of Scunthorpe. The site is split across the administrative boundaries of Doncaster Council (DC) and North Lincolnshire Council (NLC). The location of the Scheme in its wider geographical context is shown in **Figure 2.1**.
- 2.2. The site comprises 16 separate land parcels and extends to over 1,500 hectares..
- 2.3. A Scheme location plan is included at **Figure 2.1** and an indicative layout is included within the wider submission.
- 2.4. The Stainforth and Keadby Canal and the South Humberside Mainline railway line run in an east to west direction to the south of Parcel A.

Local Highway Network

2.5. A network of local roads connects the different land parcels as well as providing links to the wider local and strategic road networks.

<u>A18</u>

2.6. The A18 is a single carriageway road which is approximately seven metres wide. It is subject to the National Speed Limit (60mph) and facilitates travel between the towns of Hatfield to the west and Scunthorpe to the east. Streetlighting and footways are generally provided within the vicinity of local settlements.

<u>A161</u>

2.7. The A161 is a single carriageway road which is approximately seven metres wide. It is subject to the National Speed Limit. It connects via a junction onto the A18 to the north and can be used to join the M180 via Junction 2 to the south. Further afield the road facilitates travel between local towns such as Goole, Crowle, Epworth and Haxey.

Sandtoft Road

2.8. Sandtoft Road is a single carriageway road measuring around five to six metres in width. It is subject to the National Speed Limit and subject to a 7.5 tonne weight restriction, except for access. To the east it becomes Low Levels Bank Road and to the west it connects to the A18 via a priority junction. There are no footways or street lighting provided.

Low Levels Bank

2.9. Low Levels Bank consists of a single carriageway approximately five metres in width. It is subject to the National Speed Limit. To the east, it becomes Thorne Road and to the west it becomes Sandtoft Road. There are no footways or street lighting provided.



Crow Tree Bank

- 2.10. Crow Tree Bank is a single carriageway road measuring approximately six to seven metres wide. It is subject to the National Speed Limit. It connects onto High Levels Bank to the north and High Bridge Road to the south via a priority junction.
- 2.11. A short section of footway extends south for approximately 60 metres from the High Levels Bank junction. There is no street lighting provided.

High Bridge Road

2.12. High Bridge Road is an unmarked, single carriageway road measuring approximately three to four metres in width. It is subject to the National Speed Limit. To the east it becomes Green Bank and to the west it becomes Moors Edge Road. There are no footways or street lighting provided.

<u>Green Bank</u>

2.13. Green Bank is a single carriageway road measuring approximately four metres in width and is subject to the National Speed Limit. To the north it narrows to three metres as it crosses over the Stainforth and Keadby Canal before leading onto High Bridge Road, and to the south it connects onto the A18 via a priority junction. Where the road crosses the canal there is a 7.5 tonne weight restriction.

Clay Bank Road

2.14. Clay Bank Road is an unmarked single carriageway measuring approximately three to four metres wide. It is subject to the National Speed Limit. It connects to Green Bank to the east and to South End/Double Bridges Road to the west via priority junctions. There are no footways or street lighting provided.

<u>Moor Road</u>

2.15. Moor Road is a single carriageway that measures approximately four metres in width. It is subject to the National Speed Limit. It routes over a level crossing and the Stainforth and Keadby Canal, narrowing to around three metres as it crosses the canal. It connects to Moors Edge Road to the north and South End/Double Bridges Road to the south via priority junctions. There are no footways or street lighting provided.

Double Bridges Road

2.16. Double Bridges Road is a single carriageway which is around four to five metres wide. It is subject to the National Speed Limit. To the north it becomes South End whilst to the south it connects onto the A18 via a priority junction. There are no footways or street lighting provided.

<u>South End</u>

2.17. South End routes southeast through a residential area, before crossing a canal bridge. It becomes Ellison Street to the north and Double Bridges Road to the south east.



- 2.18. North of the canal it measures approximately six metres wide and is subject to a 20mph speed limit. A continuous footway routes along the western side of the carriageway. On the eastern side, a footway extends for around 260 metres southwards from the point it for becomes Ellison Road. Street lighting is provided along its extent.
- 2.19. South of the canal bridge it measures approximately five metres wide and is subject to the National Speed Limit. There are no road markings, street lighting or footways provided.

Moors Edge Road

2.20. Moors Edge Road is a single carriageway that measures approximately four metres wide and is subject to the National Speed Limit. To the west it becomes Church Balk and to the south it becomes High Bridge Road. There are no footways or street lighting provided.

Coulman Street

- 2.21. Coulman Street is a single carriageway road that measures approximately seven to eight metres in width and is subject to a 30mph speed limit. It connects with King Edward/Marshland Road via a priority junction to the north and connects to Church Balk/Moor Edges Road and Wike Gate Road via a cross road junction to the south.
- 2.22. A footway on the eastern side of the carriageway extends approximately 230 metres south of the King Edward/Marshland Road junction and a continuous footway routes along the western side of the carriageway. Street lighting is provided along its extent.

Coulman Road

- 2.23. This is a single carriageway road measuring approximately seven metres wide that loops through the Coulman Road Industrial Estate serving multiple businesses, storage warehouses, workshops and garages. Two priority junctions connect it to Coulman Street, one to the north and the other to the south. It is subject to a 30mph speed limit, street lighting is provided and a continuous footway exists along one side of the carriageway.
- 2.24. Traffic Regulation Orders in the form of Double Yellow Lines are present along at least one side of the carriageway.

<u>Goole Road</u>

2.25. Goole Road is a private, single carriageway road which varies in width between seven and 10 metres, becoming Grange Road to the west. Street lighting is present and a section of footway follows the road east and then north for approximately 600 metres.

Marsh Road

- 2.25.1. Marsh Road is an unmarked single carriageway that measures approximately four metres wide and currently serves a small number of dwellings and agricultural buildings. No footways are provided, and street lighting is provided at its north eastern extent only, within the vicinity of dwellings within Crowle.
- 2.25.2. To the southwest it becomes Crook O Moor Road and to the northeast it forms the minor arm of a priority junction with Cross Street and Windsor Road.



- 2.25.3. Marsh Road is subject to the national speed limit which reduces to a 30mph speed limit approximately 90 metres southwest of the junction with Cross Street and Windsor Road. There are double yellow lines on both sides of the carriageway at this junction.
- 2.25.4. Approximately 100 metres south of the junction between Marsh Road/Cross Street/Windsor Road is Crowle Primary School. Warning signage indicating the school is nearby and that a reduction of the speed limit to 20mph 'when lights show' is present approximately five metres south of the junction between Marsh Road, Cross Street and Windsor Road.

Informal Lanes/Farm Tracks

- 2.26. Due to the more rural nature of the site, some locations are accessed by smaller informal lanes and farm tracks. Due to their similarities and the fact that they will not be utilised frequently by construction traffic, these roads have not been individually analysed but are listed below.
 - Marshland Road.
 - Broadbent Gate Road.
 - Thorne Waste Drain Road.
 - Moor Owners Road; and
 - Crook O'Moor Road
- 2.27. These roads consist of rural lanes with no kerbs, footways or street lighting. They generally measure around four metres in width.

Recorded Traffic Flows and Speeds

2.28. Automatic Traffic Count (ATC) surveys have been carried out across the local highway network, further to agreement with Doncaster Council and North Lincolnshire Council. The traffic and speed surveys are summarised in Pegasus Group document "Baseline Traffic Survey Report", Appendix 12.4 of the PEIR.

Highway Safety

- 2.29. Personal Injury Collision (PIC) data has been obtained from Crashmap.com for the most recent three-year period between 2019 and 2021.
- 2.30. The overall study area is identified at **Figure 2.1** In summary, the data confirms that there has been a total of one fatal incident, 40 slight incidents and 10 serious incidents within the study area. The full PIC reports including a breakdown of where the recorded incidents occurred will be made available in the next iteration of the TS.
- 2.31. The PIC records show that the locations of the incidents are generally randomly located with no pattern or cluster and with no single contributory factor. The majority of incidents appear to have occurred as a result of temporary driver error or misjudgement. It is concluded that there are no obvious highway patterns of problems that would be exacerbated by the Scheme. This will continue to be considered in later iterations of the TS.



Accessibility By Non-Car Modes

2.32. The nearest settlement to the Scheme is the town of Thorne. The bus services available in the town are summarised in **Table 2.1**.

Table 2.1 – Local Bus Services

Service	Route	Frequency	
3	Selby - Thorne	Two per day	
84	Doncaster Interchange - Thorne	Four per day, evening only	
87 / 87a	Doncaster Interchange - Moorends	10-20 mins	
86	Thorne - Moorends	90 mins	
86a Thorne Town Service		90 mins	

2.33. The first bus to arrive at the site is at 0543 from Doncaster and the last bus to depart towards Doncaster is at 2343.

Public Rights of Way

2.34. A number of Public Rights of Way (PRoW) route through and abut the site, these are shown on **Figure 2.1** and summarised in **Table 2.2**.

Table 2.2 – PRoW within and adjacent to the site

PRoW Name	Type of PRoW	Responsible Authority
Thorne 14	Footpath	Doncaster Council
Thorne 15	Footpath	Doncaster Council
Thorne 19	Footpath	Doncaster Council
CROW 17	Bridleway	North Lincolnshire
CROW 18	Bridleway	North Lincolnshire
CROW 21	Byway open to all traffic	North Lincolnshire
BELT 21	Footpath	North Lincolnshire



Summary

- 2.35. The majority of the roads in the vicinity of the site are already frequented by large agricultural vehicles, buses and HGVs. As such the current highway infrastructure is suitable for the construction traffic associated with the temporary construction period. Construction traffic movements are considered further in **Chapter 5**.
- 2.36. The Scheme itself is rural in nature and therefore accessibility by non-car modes is limited to bus services in Thorne and existing PRoW routes. However, once operational the Solar Park will be associated with very few trips (see **Chapter 5**).



3. The Scheme Proposals

3.1. The Scheme comprises the construction, operation, maintenance and decommissioning of a ground mounted solar park with an intended design capacity of over 50MWp (megawatts peak), and a battery energy storage facility with an export/import connection to the National Grid. The indicative site layout is shown in Figure 2.2 of Chapter 2 of the PEIR.

Site Access

- 3.2. Once operational, the Scheme will be associated with very few movements by small vehicles such as 4x4 or van. As such, the access points have been designed with consideration to the requirements of construction traffic.
- 3.3. Construction traffic will access the site from various locations, as shown at **Figure 2.1**. Primary construction compounds will be located in five of the largest land parcels, where HGVs will decant materials and equipment before it is transported to other land parcels by smaller vehicle such as tractor and trailer.
- 3.4. A detailed breakdown of the access points and construction compounds can be found within the Outline Construction Traffic Management Plan (OCTMP) submitted with the DCO.
- 3.5. The arrival and departure of HGVs will be strictly managed by the site manager. Drivers will adhere to a delivery schedule and will be required to call ahead to ensure that any emerging HGVs can be held within the construction compounds. No HGVs will be permitted to wait on the public highway.
- 3.6. Banksmen will be provided at all access points to the Scheme to assist HGVs as they arrive and depart.
- 3.7. Temporary signage will be provided at the site access points in line with The Traffic Signs Manual: Chapter 8 (2020) and is proposed to include (subject to agreement with the Highway Authority) Sign Ref: 2708 – Red signage stating, 'CAUTION CONSTRUCTION TRAFFIC TURNING'.



4. Effect of the Scheme

Construction Phase

- 4.1. The construction phase includes the preparation of the site, the construction of appropriate infrastructure such as access tracks and access points as well as the construction of the fencing, PV panels, inverters, transformers and laying cabling.
- 4.2. An OCTMP has been prepared to minimise the impact of construction traffic on the highway network. The OCTMP details the number of vehicle trips expected at the site. On average there will be 328 two way trips per day, 38 of which would be HGVs, associated with the Scheme. Once dispersed across the highway network to each land parcel, this level of traffic forecast during the temporary construction phase is not considered to have a material impact on the local and strategic highway network.
- 4.3. The OCTMP sets out the proposed routes for construction traffic to each of the main construction compounds. This will minimise delays on the local highway network as well as maintaining the safety of other road users and local residents. The construction traffic route will not be deviated from unless otherwise agreed by the local planning authority.

Mitigation Measures

- 4.4. The OCTMP details a package of mitigation measures that will be implemented to minimise the effect of construction traffic on the local highway network., including:
 - Banksmen will be provided at the access points to ensure the safe movement of construction vehicles when accessing and egressing the site.
 - Signage will be provided at the access points to highlight the presence of construction vehicles.
 - The setup of a booking system to ensure that vehicle arrivals/departures are scheduled to avoid peak traffic periods on the local highway network, and to ensure only one vehicle arrives at a time.
 - Installation of signs to direct construction vehicles associated with the development along the route. Delivery drivers, contractors and visitors will be provided with a route plan in advance of delivering to site to ensure that vehicles follow the identified route. No drivers will be permitted to follow SatNav.
 - Primary compound areas for contractors will be set up within the largest land parcels including appropriate parking spaces. Contractors and visitors will be advised that parking facilities will be provided on-site in advance of visiting the site and that they should not park on street.
 - A wheel wash will be provided so that no construction vehicles exiting the site compounds will take mud or debris onto the local highway network.
 - A road sweeper will be provided for surrounding local roads along the construction traffic route to alleviate any residual debris generated during the construction phase.



- The construction compounds will be secured at all times with mesh fencing.
- A requirement for engines to be switched off on-site when not in use.
- Spraying of areas with water as and when conditions dictate to prevent dust.
- Vehicles carrying waste material away from the Scheme to be sheeted.
- Turning areas will be provided to ensure vehicles can exit the site in a forward gear.
- All residents along the construction traffic routes, will be provided with contact details of the Site Manager, which will also be provided on a site board at the entrances to the Scheme; and
- Employees will be encouraged to use sustainable forms of travel, such as walking, cycling, public transport or car sharing where possible.

Operational Phase

- 4.5. It is currently anticipated that once the Scheme is operational, there will be approximately one visit to each land parcel per day associated with equipment maintenance.
- 4.6. The largest vehicles that are likely to be used during the operational phase is expected to be no larger than a 7.5t van or 4x4 vehicles.
- 4.7. Whilst the contractor's compound will have been removed, space will remain within the Scheme for such a vehicle to turn around to ensure that reversing will not occur onto the adjacent highway.
- 4.8. Due to the small number of trips generated during the operational phase, there will be no material effect on the local highway network.

Summary

- 4.9. During construction, there will be approximately 328 two way vehicle trips per day, including 38 HGV movements, to the primary construction compounds and from the primary compounds to the smaller parcels. The OCTMP will manage when these deliveries arrive to minimise the impact on the local highway network during peak hours. As such there will be no material impact on the local highway network during the construction phase.
- 4.10. Once operational, there will be very limited trips to the site, approximately one per parcel per day by small maintenance vehicles, to provide maintenance support. The impact on the local highway network will therefore be immaterial.



5. Transport Planning Policy and Guidance

5.1. Relevant transportation policy and guidance is set out in the following documents:

- i. National Planning Policy Framework (2023).
- ii. National Planning Practice Guidelines (2021).
- iii. National Policy Statement for Energy (EN-1).
- iv. Draft National Policy Statement for Renewable Energy Infrastructure (EN-3).
- v. North Lincolnshire Local Development Framework Core Strategy (2011).
- vi. North Lincolnshire Local Transport Plan (2011).
- vii. North Lincolnshire Planning for Renewable Energy SPD (2011).
- viii. Doncaster Council Local Plan (2015 2035)
- 5.2. The main objectives within the national and local policy and guidance is to:
 - i. Reduce the need to travel;
 - ii. Reduce car dependency; and
 - iii. Encourage sustainable travel such as walking, cycling and public transport trips.
- 5.3. In transport terms paragraph 103 of the NPPF recognises that opportunities to maximise sustainable transport solutions will vary from urban to rural areas (paragraph 103), sustainable transport modes are available and safe, suitable access can be provided to the site with no significant impact to the local highway network (paragraph 108) and that development should only be refused on transport grounds where the residual cumulative impacts are severe (paragraph 109).
- 5.4. In regard to the renewable energy schemes, National Policy Statement EN-1 states that "...if a project is likely to have significant transport implications, the applicant's ES should include a transport assessment, using the NATA/WebTAG139 methodology stipulated in Department for Transport guidance, or any successor to such methodology. Where appropriate, the applicant should prepare a travel plan including demand management measures to mitigate transport impacts".
- 5.5. In regard to transporting construction materials National Policy Statement EN-3 states "Government policy encourages multi-modal transport and the IPC should expect materials (fuel and residues) to be transported by water or rail routes where possible... Road transport may be required to connect the site to the rail network, waterway or port. Therefore, any application should incorporate suitable access leading off from the main highway network. If the existing access is inadequate and the applicant has proposed new infrastructure, the IPC will need to be satisfied that the impacts of the new infrastructure are acceptable as set out in Section 5.13 of EN-1".



- 5.6. The North Lincolnshire Planning for Renewable Energy SPD indicates that schemes must demonstrate how environmental effects can be minimised during the construction process.
- 5.7. The Scheme is suitably located for a ground mounted solar park and, as such, the proposals comply with transport policy. The OCTMP and the proposed measures set out within it will manage the impacts of the development during the construction phase and seek to minimise the effects of the proposal on the local and strategic highway network.



6. Summary and Conclusions

- 6.1. This Draft Transport Statement (TS) has been prepared by Pegasus Group on behalf of RWE Renewables (The Applicant) in order to address the traffic and transportation issues associated with construction, operation, maintenance and decommissioning of a ground mounted solar park with an intended design capacity of over 50MWp (megawatts peak), and a battery energy storage facility with an export/import connection to the National Grid. Further details of the proposal and the technology used together with the proposed site layout are provided separately as part of the planning documentation. The Scheme is located within the Yorkshire and Humber regions. The site extends to over 1500 hectares, centred at approximately 10 kilometres to the northeast of Doncaster and 14 kilometres to the west of Scunthorpe. From the largest development parcel, Junction 5 of the M18 is approximately 2.5 kilometres to the west and Junction 1 of the M180 is approximately four kilometres to the southwest.
- 6.2. The TS confirms that the Scheme is suitably located, in proximity to the strategic road network and existing roads are capable of accommodating traffic associated with the construction phase.
- 6.3. Solar farms are associated with very few vehicle movements once operational with the majority of movements occurring during the construction phase. As such, this TS is supported by a draft Outline Construction Traffic Management Plan (OCTMP).
- 6.4. Due to the size of the Scheme and the number of associated land parcels, access during the construction and operational phases will be provided in a number of locations. It is concluded that the access arrangements are appropriate for the scale of the Scheme, with appropriate visibility splays and geometries provided.
- 6.5. During the construction phase, it is forecast that the Scheme could be associated with 328 two-way vehicular movements per day. It is concluded that the level of traffic associated with the proposed development will not have a material impact on the safety or operation of the local highway network.
- 6.6. It is therefore concluded that the Scheme is acceptable from a transport perspective.



Figures





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