NORTH LINCOLNSHIRE GREEN ENERGY PARK

Planning Act 2008

Infrastructure Planning (Applications Prescribed Forms and Procedure) Regulations 2009

North Lincolnshire Green Energy Park

Volume 9

9.36 Applicant's comments on responses to the ExAs ExQ3 and submissions at Deadline 8.

PINS reference: EN010116

May 2023

Revision number: 0

Glossary

Acronym	Full term / Description
2008 Act	Planning Act 2008
ABP	Associated British Ports
AGI	Above Ground Installations
BNG	Biodiversity Net Gain
CBMF	Concrete Block Manufacturing Facility
CCTV	Closed Circuit Television
CCUS	Carbon Capture, Utilisation and Storage
CEMP	Construction Environmental Management Plan
CLP	Construction Logistics Plan
CO2	Carbon Dioxide
CoCP	Code of Construction Practice
CoPA	Control of Pollution Act
DCO	Development Consent Order
DHPWN	District Heating and Private Wire Network
EA	Environment Agency
EN-1	Overarching National Policy Statement for Energy
EN-3	National Policy Statement for Renewable Energy Infrastructure
EN-5	National Policy Statement for Electricity Networks Infrastructure
EP	Environmental Permit
ERF	Energy Recovery Facility
ES	Environmental Statement
EV	Electric Vehicle
FGTr	Flue Gas Treatment Residue
FRA	Flood Risk Assessment
H2	Hydrogen
IAQM	Institute of Air Quality Management
IDB	Internal Drainage Board
INNS	Invasive Non-Native Species
LLFA	Lead Local Flood Authority
LVIA	Landscape and Visual Impact Assessment
NLC	North Lincolnshire Council
NLGEP	North Lincolnshire Green Energy Park
NPS	National Policy Statement

NSIP	Nationally Significant Infrastructure Project
OEMP	Outline Environmental Management Plan
PEIR	Preliminary Environmental Information Report
PRF	Plastic Recycling Facility
PRoW	Public Rights of Way
RHTF	Residue Handling and Treatment Facility
RLB	Red Line Boundary
SoCC	Statement of Community Consultation
SoCG	Statement of Common Ground
SoS	Secretary of State
SuDS	Sustainable Drainage Systems
TCPA	Town and Country Planning Act
WSI	Written Scheme of Investigation

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TABLES

APPENDICES

1.0 Introduction

Overview

1.1 This report sets out North Lincolnshire Green Energy Park Limited's (the Applicant's) comments on the responses by other parties to the Examining Authority's third written questions and further submissions submitted at Deadline 8.

The Proposed Development

1.2 The North Lincolnshire Green Energy Park (NLGEP), located at Flixborough, North Lincolnshire, comprises an ERF capable of converting up to 760,000 tonnes of residual non-recyclable waste into 95 MW of electricity and a CCUS facility which will treat a proportion of the excess gasses released from the ERF to remove and store CO2 prior to emission into the atmosphere. The design of the ERF and CCUS will also enable future connection to the Zero Carbon Humber pipeline to be applied for, when this is consented and operational, to enable the possibility of full carbon capture in the future.

1.3 The NSIP incorporates a switchyard, to ensure that the power created can be exported to the National Grid or to local businesses, and a water treatment facility, to take water from the mains supply or recycled process water to remove impurities and make it suitable for use in the boilers, the CCUS facility, concrete block manufacture, hydrogen production and the maintenance of the water levels in the wetland area.

1.4 The Project includes the following Associated Development to support the operation of the NSIP:

- a bottom ash and flue gas residue handling and treatment facility (RHTF);
- a concrete block manufacturing facility (CBMF);
- a plastic recycling facility (PRF);
- a hydrogen production and storage facility;
- an electric vehicle (EV) and hydrogen (H2) refueling station;
- battery storage;
- a hydrogen and natural gas above ground installation (AGI);
- a new access road and parking;
- a gatehouse and visitor centre with elevated walkway;

- railway reinstatement works including; sidings at Dragonby, reinstatement and safety improvements to the 6km private railway spur, and the construction of a new railhead with sidings south of Flixborough Wharf;
- a northern and southern district heating and private wire network (DHPWN);
- habitat creation, landscaping and ecological mitigation, including green infrastructure and 65 acre wetland area;
- new public rights of way and cycle ways including footbridges;
- Sustainable Drainage Systems (SuDS) and flood defence; and
- utility constructions and diversions.

1.5 The Project will also include development in connection with the above works such as security gates, fencing, boundary treatment, lighting, hard and soft landscaping, surface and foul water treatment and drainage systems and CCTV.

1.6 The Project also includes temporary facilities required during the course of construction including site establishment and preparation works, temporary construction laydown areas, contractor facilities, materials and plant storage, generators, concrete batching facilities, vehicle and cycle parking facilities, offices, staff welfare facilities, security fencing and gates, external lighting, roadways and haul routes, wheel wash facilities, and signage.

The Purpose and Structure of this Document

1.7 This document sets out the Applicant's comments on the answers submitted by other parties to the Examining Authority's third written questions and further submissions received by the Examining Authority at Deadline 8.

1.8 The Applicant notes that there were several of the third written questions directed towards North Lincolnshire Council but that no response was submitted at Deadline 8. As such, no comment on those responses has been made in this document.

1.9 The document is structured as follows:

- Section 2: Natural England
- Section 3: Environment Agency
- Section 4: AB Agri
- Section 5: Cadent Gas

- Section 6: Anglian Water
- Section 7: UKWIN
- Section 8: Amy Ogman
- Section 9: Brian Oliver

2.0 APPLICANTS' COMMENTS ON NATURAL ENGLAND'S WRITTEN QUESTION / RIES RESPONSES

2.1 The Applicants' comments on Natural England's responses to the Examining Authority's third written questions and RIES document (REP8-036) can be found below in Table 1.

Table 1: Applicants comments on Natural England's response to the Examining Authority's third written questions / RIES document

Natural England's Responses	Applicant's Comment
Q2.1.1 Natural England advise that all relevant European sites have been identified in the Report to Inform Habitats Regulations Assessment (HRA) (dated March 2023). We also advise that the correct features of these sites have been listed in Table 4 of the Applicant's Report to Inform HRA.	No Comment.
Q2.5.1 We advise this is an acceptable approach as the underlying habitat types are the same as for Humber Estuary SPA and SAC, and therefore use of the same critical loads or critical levels is appropriate.	No Comment.
Q2.5.7 Natural England agree that the use of these parameters to undertake the HRA is suitable as the modelling. The DCO does secure the ERF technology, the use of which has been used to inform the modelling. We note that the operating parameters (such as operating hours) are not proposed to be secured in the DCO. However, an	No Comment.

environmental permit will be required for the development which will also require a HRA to be undertaken and will be able to set these conditions. We are satisfied that the modelling has been undertaken using the best available information to demonstrate no AEOI. Previously, when only the information on the worst-case emissions scenario was provided, there wasn't sufficient evidence to conclude a scenario existed where there would be no AEOI, and relying on this being demonstrated at a later date for the permit would have been inappropriate. The HRA submitted for this DCO should also be considered in the environmental permit HRA as they are for the same project.	
Q2.5.10 Natural England have based our decision on the annual NOx emission period, which provides a more accurate for consideration of the potential for long term impacts.	No Comment.
Q2.5.12 For European sites Natural England are satisfied that the correct screening conclusions have been reached for the operational emissions to air both alone and in combination following the revised ROC results.	No Comment.
Q2.1.1	No Comment.

Following the review of [AS-016] NE agree that with the movement of the access road to a distance greater than 200m from Humber Estuary SAC and Ramsar traffic impacts from the proposed development can be screened out of further assessment.	
Q2.1.2 Following the review of [AS-016] NE agree that with the movement of the access road to >200m from Humber Estuary SAC and Ramsar, traffic impacts from the proposed development can be screened out of further assessment.	No Comment.
Q2.1.3 Natural England advise that the correct qualifying features have been identified for the dust impact pathway.	No Comment.
2.1.4 Following the review of [AS-016] Natural England is content that a conclusion of no LSE can be determined for impacts due to bored piling, as evidence is provided in sections 4.5.3.2 to 4.5.3.5 of reasons to rule out impacts from this pathway. However, Natural England also notes that the current assessment does not consider the impact pathway of percussive piling on lamprey, further advice is provided on this point below. To clarify, Natural England's advice on the impacts of percussive piling primarily relate to the impacts to designated birds which are	Noted and now included in an updated HRA.

highly impacted by sudden loud bangs which arise from percussive or impact piling. However, there may also be impacts to lamprey due to the more significant vibrations interrupting the migration route. The proposed mitigation of soft start (proposed as a possibility in section 5.3.1.4 of the HRA) may be suitable for lamprey as this will give them opportunity to move away from the noise source before percussive piling begins, however this will need to be included for assessment within the HRA along with the predicted noise and vibration levels to determine suitability.	
Q2.1.5 Natural England agree with the applicant that LSE can be screened out for impacts on migrating sea and river lamprey based on the vessel movements remaining within existing permitted baseline levels.	No Comment.
Q2.1.7 The survey results information provided by the applicant, which has now been incorporated into the HRA, demonstrates that there is not >1% of the population of other designated bird features present using the land which will be lost due to the development. Natural England do recommend that survey results are included at the Appropriate Assessment stage of the HRA as they form the basis of 'further assessment', however based on the results	Noted and now amended in an updated HRA.

provided we would not expect a different outcome in the assessment of loss of functionally linked land, or disturbance during construction and operation. As stated above, we would recommend that survey results are included at the Appropriate Assessment stage of the HRA, however we would not expect a change in the outcome of the HRA due to this change.	
Q2.1.8 As stated above we would recommend that survey results are included at the Appropriate Assessment stage of the HRA. However, based on the bird survey results it is demonstrated that there will not be a direct loss of land which is used by a significant number of birds associated with the designated sites. We advise therefore that our outstanding concerns relate to the potential for disturbance due to noise impacts on adjacent functionally linked land, this is considered further in response to question 3.1.4 Q	Noted and amended within updated HRA.
Q2.1.9 As stated previously, Natural England recommend that survey results are taken to Appropriate Assessment. However, based on the information provided, it is the impacts on the mallard feature which require mitigation due to the significant numbers found on the River Trent and the adjacent banks, which has been identified in the HRA.	Noted and added to the updated HRA.

The additional information submitted by the applicant demonstrates that with the addition of the acoustic barriers, the noise levels on the birds within the boundary of Humber Estuary Ramsar, and on land functionally linked to Humber Estuary SPA (the River Trent and associated banks) will be within the existing background levels and therefore provided this mitigation is secured the impact has been addressed. However, this is for construction noise including bored piling, further information is required for the impacts which may arise from percussive or impact piling. Our further advice on this is outlined in response to question 3.1.4 Q. The impacts due to light pollution are addressed thorough the incorporation of the appropriate lighting measures, which are secured in the DCO.	
Q2.1.10 Following the applicant's response, we advise it is possible to rule out LSE due to the existing raised embankment barrier which will prevent significant effects.	No Comment.
Q3.1.2 Following the review of [AS-016], for the European designated sites identified, Natural England agrees with the conclusion of no adverse effect on integrity from operational air quality emissions in combination with Keadby 2 and 3.	No Comment.
Q3.1.3	No Comment.

Following the review of [AS-016] a 200m screening distance for impacts from construction dust has been implemented. Therefore, Natural England concur with the conclusion of no AEOI for impacts on designated features due to construction dust with the implementation of the CEMP as mitigation.	
Q3.1.4 Based on the information which has been provided in the review of [AS-016] to demonstrate the noise levels for construction activity including bored piling, we agree with the applicant's conclusion of no AEOI, with the addition of mitigation in the form of acoustic barriers to reduce noise impacts. We also welcome the implementation of the COMP as further mitigation, which will be overseen by an Ecological Clerk of Works. The appropriate lighting measures have been secured within the requirements of the DCO to prevent visual impacts. Therefore, we would advise that timing of construction activities would not be required to be secured for the use of bored piling, however the use of the acoustic barriers should be secured in the DCO. However, for percussive piling we have outstanding concerns due to the high potential for impacts due to sudden loud bangs which are more disturbing for birds than a continuous noise. The HRA will need to outline the circumstances where impact or	An updated version of the HRA is being prepared for submission at Deadline 10. This will incorporate further information about percussive piling, something that will only occur if the silent hydraulic approach to sheet piling (at the Bunker Hall) meets a blockage. It will explain also the options for mitigation, the processes to determine what is needed and likely levels of effect. The measures that relate to controls of noise and vibration will be secured via the Code of Construction Practice (CoCP) / Construction Environment Management Plan (CEMP) and in particular: • **Appendix K** - Outline Piling and Foundation Works Management Plan; • **Appendix L** - Outline Construction Noise and Vibration Management Plan; and • **Appendix M** – Preliminary Construction Ornithological Management Plan (updated version to be submitted).

percussive piling will be required, as well as the noise levels this activity will generate, and then include an assessment of proposed mitigation. We note the Code of Construction Practice has been updated (dated April 2023) and does include some information on this point (sections 4.1.1.7 to 4.1.1.9). These measures should be assessed for suitability in the HRA.	
Q3.1.5 The survey results which have now been provided by the applicant demonstrate that the development site is not regularly used by >1% of the species associated with the Humber Estuary SPA and therefore is not considered functionally linked. However, the adjacent River Trent section should be considered as Functionally Linked Land for the Humber Estuary SPA, as well as being part of the Ramsar designation, due to the high number of mallards which may be subject to disturbance effects from noise and visual disturbance. Therefore, our advice stated above in response to 3.1.4 Q. is also applicable to this question, including our concerns on the outstanding percussive piling impacts.	Noted and addressed in the updated HRA (to be submitted at Deadline 10).
Q3.1.6 Based on the revised modelling it is possible to determine no AEOI without additional mitigation for this European site	No Comment.
Q3.4.2	No Comment.

We have no additional comments to make on mitigation, further to those points we have already raised on percussive/impact piling.	
Annex Q1.1 As stated previously, for the impact pathways which required bird surveys to determine potential for significant effects Natural England would advise the survey results should be incorporated into the Appropriate Assessment, rather than screening out the impact pathway at LSE. However, based on the information provided Natural England does agree with the outcome of these issues, and is not of the opinion that further mitigation will be required, other than for the previously raised potential for impacts due to percussive/ impact piling.	Noted and added to the updated HRA (to be submitted at Deadline 10).
Annex Q1.2 Natural England have no comments to make for this question.	No Comment.

3.0 APPLICANTS' COMMENTS ON THE ENVIRONMENT AGENCY'S WRITTEN QUESTION RESPONSES

3.1 The Applicants' comments on the Environment Agency's response to the Examining Authority's written questions (REP8-034) can be found below in Table 2.

Table 2: Applicants comments on the Environment Agency's response to the Examining Authority's third written questions

The Environment Agency's Responses	Applicants Comment
The Environment Agency can only provide comment on the appropriateness of such matters during its determination of an Environmental Permit application. The operator will be required to produce a written management system as part of their environmental permit and this will include consideration of odour, insect and vermin management. The Environment Agency can impose a condition on an Environmental Permit so that within the operational boundary of the site the activities shall not give rise to the presence of pests ('pests' being birds, vermin and insects). An example of such a condition would read: *The activities shall not give rise to the presence of pests which are likely to cause pollution, hazard or annoyance outside the boundary of the site. The operator shall not be taken to have breached this condition if appropriate measures, including, but not limited to, those specified in any approved pests management plan, have been taken to prevent or where that is not practicable, to minimise the presence of pests on the site.*	The Applicant acknowledges the EAs response and notes that this is in line with their understanding of the Environmental Permit process.

The operator shall: *(a) if notified by the Environment Agency, submit to the Environment Agency for approval within the period specified, a pests management plan which identifies and minimises risks of pollution from pests;* *(b) implement the pests management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.*	
Q3.0.1 The Environment Agency has not undertaken a detailed review of the Applicant's air quality impact assessment and will only do this during its determination of an environmental permit for the site, as mentioned in paragraph 8.1 of its Relevant Representation [RR- 060]. We do not have the resources to undertake a review of Mr Nicholson's model, therefore, we are unable to provide any comment on this issue.	This response is noted.
Q3.0.2 The Environment Agency can only provide comment on the appropriateness of such matters during its determination of an Environmental Permit application. The operator will be required to produce a written management system as part of their Environmental permit and this will include consideration of odour management. At this time we can only provide general advice that the Environment Agency can impose a condition on an Environmental Permit so that within the operational boundary of the site the	The Applicant acknowledges the EAs response and notes that this is in line with their understanding of the Environmental Permit process.

activities shall not give rise to odour. An example of such a condition would read: *Emissions from the activities shall be free from odour at levels likely to cause pollution outside the site, as perceived by an authorised officer of the Environment Agency, unless the operator has used appropriate measures, including, but not limited to, those specified in any approved odour management plan, to prevent or where that is not practicable to minimise the odour.* *The operator shall:* *(a) if notified by the Environment Agency that the activities are giving rise to pollution outside the site due to odour, submit to the Environment Agency for approval within the period specified, an odour management plan which identifies and minimises the risks of pollution from odour;* *(b) implement the approved odour management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.*	
Q5.1.3 When permitting any energy from waste facility the Environment Agency will ensure that Best Available Techniques (BAT) are used. There are BAT Associated Emissions Limits for NOx that must be met as a minimum requirement. For NH3 we would expect a proposal to be justified as BAT in the context of the predicted impacts.	This is noted.

However, to make any comment at this stage (i.e. prior to any permit determination process) could be considered 'pre-determination'. In this instance, we would refer the Examining Authority to the advice in Paragraph 4.10.3 of the Overarching National Policy Statement for Energy (EN1) in that it should be assumed that the environmental regulatory regime will be properly applied and enforced by the Environment Agency.	
Q6.0.1 The Environment Agency is unable to provide any further advice/comment on this matter as there is no guidance against which to assess the information provided by the Applicant. The Government position on Decarbonisation Readiness is yet to be finalised and if all the proposals are taken forward, this matter will be assessed as part of the Environmental Permit application if required at the time using available guidance.	This is noted.
Q6.0.2 The Environment Agency can advise that the type and nature of the project is such that it should be capable of being adequately regulated under the Environmental Permitting regime, and it is not currently aware of anything that would preclude the grant of a permit, but would also point out that its view could change depending on the content of the permit application when this is received.	This is noted.

Q17.0.1 The Environment Agency is not able to direct the ExA to any evidence in relation to excess capacity but would refer back to its Deadline 6 submission [REP6-039] in respect of the information provided relating to the site operators Duty of Care and the duty of any waste holder to apply the waste hierarchy as required by Regulation 12 of the Waste (England and Wales) Regulations 2011. Consequently, there should be no expectation of an adverse effect on prevention, re-use or recycling.	The Applicant entirely agrees with the Environment Agency that the duty of waste producers and handlers to apply the waste hierarchy, and to confirm in waste transfer notes that they have done so, means that there would be no effect on the levels of reduction, reuse and recycling were there to be an excess of energy from waste capacity at the local, regional or national levels. Any other outcome would risk prosecution of one or more parties.

4.0 APPLICANTS' COMMENTS ON AB AGRI LIMITED'S DEADLINE 8 SUBMISSION

4.1 AB Agri Limited's provided a submission at Deadline 7 which included comments on the Salmonella Risk Assessment submitted at Deadline 6 [see REP8-037]. The Applicant's response to AB Agri Limited's Deadline 8 submission is set out in table 3 below.

Table 3 – Applicant's comments on AB Agri Deadline 8 submission

AB Agri Limited's Deadline 8 Submission Comments	Applicants Comment
Transportation of RDF and HGV Movements 3.2 The SRA explains that there are three transport modes for the delivery of RDF. However, the Applicant's Transport Assessment assumes a worst case scenario that all RDF will travel by road, as there is no commitment in the DCO with regard to the delivery modes. As such, the risk assessment must similarly be undertaken on the basis of a worst case scenario i.e. for RDF to be delivered via road transport only.	This comment is not relevant to the SRA and misunderstands the purpose of a Transport Assessment assuming a worst-case scenario that all RDF will travel by road (Rochdale Envelope approach for impacts on road traffic and road users). The SRA assessed all three transport modes for RDF.
3.3 The Schedule of Mitigations (Revision 1) and the OEMP (Revision 1) specify that "vehicles carrying RDF will not use First Avenue." Figure 1 in the SRA is rather misleading, as it shows that vehicular traffic will arrive from the south, turn around within the building or southern side of the ERF building and leave the site to the south. Having reviewed the Applicant's Transport Assessment, it is clear that the design of the Project is such that HGVs accessing the ERF building will be directed on a clockwise loop around the ERF area. A ramp will be available from the access road and over the ERF car park	Figure 1 of the SRA shows that vehicular traffic will enter and exit the site to and from the south. Vehicular traffic delivering RDF will access the tipping hall via the waste reception ramp and waste reception area at an upper level – refer to 4.12 Indicative elevations and sectional drawings for the ERF and built Associated Development (with vertical parameters) [APP-026]. Vehicles delivering RDF will turn around at the waste reception area and exit the site to the south via the waste reception ramp. There will be no need for vehicular traffic delivering RDF to circulate around the ERF at site level.

area for HGVs to access the tipping hall directly and delivery vehicles will then be able to "turn around using the loop around the ERF area". Appendix G of the Transport Assessment (extract attached below) shows the HGV tracking around the ERF building and it is evident that the traffic route within the site is not designed for delivery vehicles to turn around within the building or outside without using the loop. Therefore, while vehicles carrying RDF will not travel on First Avenue, the vehicles used for RDF transportation will be routed in parallel and adjacent to First Avenue – the impact of the vehicles using this route is materially the same as if they were using First Avenue itself	AB Agri has noted that the Applicant's Transport Assessment (6.2.13 Traffic and Transport - Revision: 1 Appendix B) [REP2-021], shows that HGVs accessing the ERF building will be directed on a clockwise loop around the ERF area… and delivery vehicles will then be able to "turn around using the loop around the ERF area". The Applicant notes that the vehicle tracking circulation route at site level shown in the Transport Assessment (6.2.13 Traffic and Transport - Revision: 1 Appendix B) [REP2-021] is for HGV's servicing the ERF – such as reagent and residue deliveries and collections – rather than for RDF waste deliveries. The Applicant has agreed to AB Agri's request on vehicle routing and that no vehicles carrying RDF will be routed along First Avenue.
3.4 AB Agri has been advised by SLR that any truck carrying an RDF load which fails waste acceptance criteria at vehicle inspections (the process of which is explained in the ERF Technical Review) will leave the tipping hall/the ERF building with full or a part load – this relatively common-place occurrence in such facilities is not considered in the assessment. In addition, the OEMP does not include a wheel washing and vehicle disinfection regime on site before vehicles loop around the ERF building and leave the site. Indeed, the SRA does not commit to a wheel washing and disinfection regime, as it states that it will be considered in	The regularity of RDF rejection on delivery from contracted sources is not commonplace. It is more common with untreated MSW which this facility will not be handling. The vehicles whether full, half full or empty will not circle the ERF building. The only vehicles to circulate in this way will be service vehicles. The OEMP does now include the provision of wheel washing and disinfection regime in response to AB Agri's concern.

the course of the Environmental Permitting process based on a risk assessment. However, a washdown/disinfection facility on site is not typically a requirement for RDF in the Environment Permitting process and that the Applicant offers no commitment, it is reasonable to assume that there will be no wheel washing or disinfection regime. Therefore, the measures proposed by the Applicant in terms of vehicle routing is misleading and does not minimise the risk to AB Agri.	
Baling of RDF and Compliance with the RDF Code of Practice 3.5 The SRA explains that the RDF could be delivered in baled and wrapped in layers of polythene or other plastic wrapping or bulk RDF compacted into covered/fully-enclosed containers. By road, the RDF will be delivered in covered trailers e.g. a walking floor or baled. The Applicant states that it will "contractually require its suppliers to adhere to the Refuse Derived Fuel – Code of Practice prepared and published by the RDF Industry Group." The Applicant proposes that this is to be secured by way of the OEMP (DCO Requirement 4). 3.6 SLR's experience and knowledge of ERF commissioning and operation strongly indicates that the Applicant's commitment is unrealistic, as baling would be a costly requirement for the suppliers, it is not the industry norm and is likely to make the ERF operationally and commercially unviable. In addition, even if RDF	We note SLR's points and deep experience in this field. The majority of RDF exported from the UK currently is baled, over 300,000 tonnes through the Humber ports and the Applicant has made it clear that part of the feedstock sourcing included export interception. Therefore the flexibility to accept baled RDF is included in the assessment. All unloading including the de-baling is all managed within the building under negative pressure and is part of the detailed design of the facility. The Applicants preference is containerised RDF by boat or rail, and these have been documented.

is baled in line with the Code of Practice, it does not guarantee that no waste will be exposed or spilled before reaching the ERF. These are based on the following factors: • While there are process stages in the RDF Code of Practice that are applicable to RDF for use in the UK, it was prepared to explore and address issues surrounding RDF export from the UK. As such, the narrative of transport is aimed at pre-treatment RDF being baled and transported from the waste processor to the shipping port. Therefore it is for export of RDF to ERFs in Europe when the RDF industry bales RDF in accordance with the Code of Practice. For domestic purposes, the ERF industry/operation does not require RDF to be baled as RDF is typically delivered by trailer or by rail. Other ERFs such as Runcorn and Dunbar ERF and the 2x multifuel ERFs in Ferrybridge receive RDF in trailer or by rail and none of RDF is baled. • The baling of RDF in accordance with the RDF Code of Practice carries significant costs. As such, it is not industry standard to transport RDF in bales for domestic purposes. • As evidenced by the ERF operation in Europe, based RDF would require an extensive “debaling” process to	

remove the plastic wrapping involving a 360 grab excavator, as bales cannot be loaded onto the bunker or conveying system. In the UK, baling would present an unnecessary process stage and increase operational and disposal costs to the ERF. Indeed, it does not appear from the submitted documents by the Applicant that the debaling process is factored into the operation/design of the proposed ERF. As explained in the ERF Technical Review, there is always a risk of bales not being debaled properly which would cause blockages in the fuel feed chute and also make the "housekeeping" of the facility and operation more onerous. Therefore, there will be an additional risk to the ERF failure including the outage of negative pressure. • The plastic layers of baled RDF in line with the Code of Practice break down as a result of continual handling. The image below is an example of broken bales which are stored prior to being loaded/used. 3.7 As evidenced in SLR's ERF Technical Review, it is highly likely that the operation of the ERF	

will depend on loose RDF being delivered by trailers in order of the operation to be commercially viable. 3.8 Therefore, while the Applicant categorically states that there are no features of the Project that would act to increase the populations of avian and rodent pest species in the area and that the ability of pest species to gain access to the RDF either in transit or after delivery to the tipping hall will be very limited. Clearly, this is not proven to be the case, as there is no evidence that the Applicant will be able to require the RDF suppliers to comply with the RDF Code of Practice and that, even if the RDF Code of Practice is complied with, it is impossible to prevent RDF from being spilled or exposed.	
Salmonella Contamination of RDF 3.9 Scientific literature review undertaken by the Applicant to assume that "RDF is probably at the lower end of the scale of significant sources of pathogen" is unfounded. The Applicant's RDF assessment indicates that the proposed facility does not preclude commercial waste being the source of RDF in addition to black bag waste collected by local authorities. Unlike local authority collected waste which has targets to increase recycling materials and dedicated food waste collection, there is no such target drive for commercial and industrial waste. Therefore, it is highly likely that commercial and industrial waste streams will be contaminated with food waste, and due to	Response to comment Salmonella Contamination of RDF "3.9 Scientific literature review undertaken by the Applicant to assume that "RDF is probably at the lower end of the scale of significant sources of pathogen" is unfounded." While the applicant does not contest that Salmonella may be present in any waste from human or animal activities (small residues of food in household refuse that might be contaminated with Salmonella), there is a large body of evidence that the main sources of Salmonella transmission in the environment (non-host reservoirs) to wild animals and vermin are water, soil and produce contaminated with manure or waste water from animal and human origin. Murray (2000), referring

the shredding process, food and organic waste would be included in the RDF. 3.10 Furthermore, the pre-treatment process of the RDF derived from commercial and industrial waste (which would include the industrial operations processing animal-origin products) would be as minimal as just shredding and the removal of valuable items such as metal. This means that the risk of RDF being a significant source of salmonella contamination cannot be precluded.	to the environmental aspects of Salmonella, concludes that Salmonella may be present in any waste from human or animal activities but the degree of contamination of the environment from this source is very small compared with animal waste (manure, among other sources) and sewage discharges. As the only way Salmonella contained on the RDF delivered to North Lincolnshire Green Energy Park could reach AB Agri facilities would be through vermin vectors, and as there is low significance on the RDF as environmental source of Salmonella contamination to vermin, the risk of transmission from RDF to AB Agri by vermin is therefore still considered at the lower end. Furthermore, a study investigating evidence-based and risked-based evidence concluded that the risk of children getting infected when exposed to municipal solid waste truck leachate (even if it contained diapers of children with an active Salmonella infection) is very low, therefore confirming our previous assessment that the risk of contamination of animals exposed to leachate from municipal solid waste truck is very low (children being even more susceptible to infection). Response to comment 3.10 “Furthermore, the pre-treatment process of the RDF derived from commercial and industrial waste (which would include the industrial operations processing animal-origin products)” This is not true. Commercial and industrial waste to be defined as RDF specifically excludes animal

	origin products. Only food waste from households might be a part of RDF.
Controls within the ERF, including Negative Pressure Environment and Pest Control 3.11 The Applicant relies entirely on the tipping hall maintained under negative pressure at all times and pest control measures under the Environmental Permitting regime to underplay the risk of RDF spilling out of the tipping hall or being the source attractive vermin in the area. However, as extensively demonstrated in our Deadline 7 submission including SLR's ERF Technical Review, in practice, there will inevitably be RDF spillages outside for certain periods of time and the pest control would become ineffective. The Applicant has not addressed the possibility of negative pressure environment in the tipping hall failing as it is of the view that it will never fail, which is, in reality, highly unlikely. The Applicant's ES Mitigation Chapter (Revision 1), OEPM (Revision 1) and Design Principles and Codes (Revision 4) have been reviewed, but none suggests that there are measures over the standard requirements of ERF facilities to prevent or minimise the risk of negative pressure environment failing or RDF spilling out of the ERF building. Therefore, all of the issues that we raised in our Deadline 7 submission still stand.	The Applicant notes that the tipping hall for the project has a single door which is easier to maintain closed. The door would operate automatically, reducing the likelihood of an operator error. A second manual door may be provided to ensure closing of the door should the fast-acting door fail to ensure the sealed building is maintained. Maintaining negative pressure could in theory be an issue due to failure of the combustion air fans or failure of a combustion line. The Applicant notes that preventative maintenance would be carried out to ensure operation of the primary air fans, which would increase the resilience of the facility. The facility cannot operate without the primary air fans, as such maintenance of this equipment is crucial for commercial operation, not just from an environmental perspective. Additionally, the facility has three combustion lines. Co-incident failure of all three lines is unlikely. An extended common outage, for a turbine outage for instance can be accommodated by planning in advance and gradually reducing the bunker volume over a period of weeks, minimising the risk of stored fuel. During a prolonged outage, the fast-acting door/manual door can be closed to ensure the sealed building is maintained.
Remit of the Environmental Permitting Regime 3.12 The Applicant states in the SRA that the operation of the Project will be regulated by	The main function of the EP Regulations is for "regulating activities or other matters that cause

the terms of the Environmental Permit from the EA. In this regard, the Applicant anticipates that following will be secured by the Environment Permit: • Many, if not all aspects of the delivery and handling of RDF set out in the RDF Code of Practice will be covered by the terms of the permit, thus becoming a legal compliance matter for the Applicant. • An Odour Management Plan, as the Environmental Agency will require strict controls to avoid odour nuisance from the ERF, and • All required Pest Control Measures. 3.13 The Applicant states in the SRA and the ES Mitigation Chapter (Revision 1) that other potential measures will be determined through a detailed biohazard/biosecurity risk assessment undertaken as part of the application for an Environmental Permit and the EA will determine the ultimate need for such measures and for a Pest Management Plan to provide the framework for implementing them. As with the case in the Applicant's Deadline 7 submission, the Applicant relies on an assumption on behalf of the EA that they will ensure that the Environmental Permit would deal with biosecurity risks to AB Agri. However, as stated previously the Environmental Permitting regime is not intended to impose the type and	pollution". Pollution is defined in several parts of the Regulations, including: ""pollution", other than in relation to a water discharge activity or groundwater activity, means any emission as a result of human activity which may— (a) be harmful to human health or the quality of the environment, (b) cause offence to a human sense, (c) result in damage to material property, or (d) impair or interfere with amenities or other legitimate uses of the environment;" Clearly EA will determine what matters are addressed in the permit based on the nature of the activity and its potential to contribute to the above impacts. It is therefore reasonable to assume that potential biohazard risks from the Project to a neighbouring property which is vulnerable to such risks would be within the remit of the permit.

level of controls and measures necessary to minimise the biosecurity risks to AB Agri. The Environmental Permitting regime does not extent outside the operational area, to the operations of third party, or to the monitoring of day to day operations including 'housekeeping' of the ERF facility and contractors. Therefore, it is not satisfactory to defer a biosecurity risk assessment to the Environmental Permit application stage. 3.14 We are not aware of an application for an Environmental Permit being submitted by the Applicant, and therefore, there can be no assurance that necessary measures to reduce biosecurity risks to AB Agri will be covered by the Environmental Permit.	
The Likelihood of Existing Risk to AB Agri Increasing 3.15 The SRA states that there is a strong likelihood that gulls in the vicinity of AB Agri will have visited landfill sites locally and that it is reasonable to conclude that the Project will not by its nature substantially add to the number of avian pest species in the area. It further states that based on the research paper which did not find a correlation between the prevalence of salmonella in gulls and the amount of refuse they eat, the risks to AB Agri that exist already remain the same with having a nearby ERF. On this basis, the SRA concludes that its Project will not materially add to the existing level of risk to AB Agri operation.	Response to comment 3.16 "The research paper not finding a correlation between salmonella in gulls and the amount of refuse they eat is not the same as gulls not carrying salmonella" Form the research paper it could be inferred that the prevalence (infection) of gulls is not significantly different if the gulls feed on refuse from refuse tips or other dietary sources. This has not only been reported by Ramos et al. (2010) but also by other researchers (for example Monaghan et al. 1985). In addition to that, the prevalence of Salmonella in gulls is low. Although wild birds are recognized as carriers of Salmonella, evidence suggests that infected birds are rarely identified. The incidence of Salmonella carriage in wild birds appears to be low (Murray, 2000 and references

3.16 The research paper not finding a correlation between salmonella in gulls and the amount of refuse they eat is not the same as gulls not carrying salmonella. It should be noted that the Project will change the characteristics of the immediate vicinity of AB Agri in that, from the construction phase, the site is more likely to attract birds and rodents in the area due to food waste (from construction workers) rather than simply being a riverside location. Flixborough Industrial Estate has an existing ERF, Glanford Power Station. However, the fuel it uses is a pelletised by-product from the rendering process which kills salmonella (ie the fuel is not contaminated with salmonella) and its delivery route is not in close proximity to AB Agri and its intake area. Therefore, as already addressed in the previous submission, there is no increased risk of salmonella transmission from Glanford Power Station's operations. 3.17 When the ERF is in operation with ERF being transported to the site, the population of the birds and rodents is very likely to increase for the reasons stated above about the nature of RDF delivery and the ERF operation, and the risk of these pest species transmitting salmonella to AB Agri will increase as a result of the Project than the existing situation.	therein, and is not considered one of the main sources of Salmonella spreading. "the site is more likely to attract birds and rodents in the area due to food waste (from construction workers)": This is not a direct effect of the delivery of RDF. In addition, it is readily manageable through provision of suitable refuse containers and general good hygiene and 'housekeeping' practices on site. Response to comment 3.17 "the population of the birds and rodents is very likely to increase for the reasons stated above about the nature of RDF delivery and the ERF operation" : The population of birds and rodents is not likely to increase because pest control measures will be in place as discussed in the 9.29 Salmonella Risk Assessment, section 3.3.2 [REP7-033].
7. Residual Risk with Controls in Place 3.18 The Applicant concludes that its operation will not result in any material change to the current salmonella contamination risk profile	The Applicant has not provided misleading information about RDF routing in the vicinity of the ERF and the SRA provides a map for the routing of RDF for each of the three transport modes.

for the AB Agri facility on the basis of the following: • The likelihood of the operating Project compromising AB Agri's biosecurity is very small even without the application of a series of measures, above and beyond compliance with the RDF Code of Practice by the Applicant; • There are no features of the Project that would act to increase the populations of avian and rodent pest species in the area; • The ability of pest species to gain access to the RDF either in transit or after delivery to the tipping hall will be very limited, and • The proposed re-routing will reduce a very low risk of activity for Salmonella further. 3.19 The Applicant has made a number of unrealistic assumptions and appears to have provided misleading information about RDF routing in the SRA. Therefore the SRA is flawed and cannot be relied upon to reach the conclusion Applicant has reached. The ERF operation involves third parties (particularly in relation to RDF), over which it has not ultimate control, and relies on stringent operational measures by these parties to achieve the assumptions made in the SRA. As explained in the SLR's ERF Technical Review, the Applicant's	The submission is largely based on risks from a badly run operation with numerous things going wrong or failing, The Applicant has made a number of commitments to deliver a well-run operation where the transport, delivery and handling of RDF is concerned and stands by the conclusions of the Preliminary SRA. The measures proposed by the Applicant will be secured by an OEMP through the DCO and an Environmental Permit. The Applicant acknowledges that the EP applies to operations within the 'installation boundary'; however the purpose of the Environmental Permit is to protect the environment, people and property beyond the installation boundary.

commitment/assumption assumes no room for breakdown or departures from best practice, which is, in reality, not achievable. The reliance of the Environmental Permitting regime is not the satisfactory response to AB Agri's concerns as it is not intended to include controls and measures outside the operational area or the operation by third party contractors such as RDF deliveries. The Environmental Permitting regime deals with environmental matters such as noise and odour, but it is not intended to deal with matters such as biosecurity risks, waste spillage from vehicles on route and monitoring of day to day operations including 'housekeeping' of facilities. 3.20 As such, there remains a significant biosecurity to AB Agri, who is extremely concerned about the impact it would have on the AB Agri's facility and ultimately the UK food supply chain.	

4.2 References to this section:

- Monaghan, P., Shedden, C. B., Ensor, K., Fricker, C. R., & Girdwood, R. W. A. (1985). Salmonella Carriage By Herring Gulls in the Clyde Area of Scotland in Relation to Their Feeding Ecology. Journal of Applied Ecology, 22(3), 669–679.
- Murray, C.J., 2000. Environmental aspects of Salmonella. Salmonella in domestic animals, 16, pp.265-283.
- Shatkin, J.A., Smith, J. and Moyer, N., 2005. Evaluating Children's Health Risk from Exposure to Municipal Solid Waste Truck Leachate in the United States: Complementary Evidence-Based and Risk-Based Assessments. Journal of Children's Health, 2(3-4), pp.321-343.

5.0 APPLICANTS' COMMENTS ON CADENT GAS' FURTHER INFORMATION

5.1 Cadent Gas provided a submission at Deadline 8 [REP8-033] which set out their position in regard to the proposed Protective Provisions for the application. Please see Table 4 for the Applicant's response to this submission.

Table 4 – Applicant's comments on Cadent Gas' Further Information

Cadent's Deadline 8 Submission	Applicant's Response at Deadline 9
INTRODUCTION 1. We act for Cadent Gas Limited (Cadent). 2. The draft DCO (dDCO) for the North Lincolnshire Green Energy Park project (the Project) being promoted by the North Lincolnshire Green Energy Park Limited (the Promoter) contains development which may affect Cadent's apparatus. 3. Cadent has Cadent has several low, medium and high pressure gas pipelines and associated apparatus (the Apparatus) located within the order limits which may be affected by works proposed and for which further details on interactions will be required.	This is noted. The Applicant has previously shared technical drawings with Cadent on the interaction between their infrastructure and the Project but can provide further details as necessary.
4. Cadent is the holder of a gas transporter licence (the Transporter Licence), granted pursuant to section 7 of the Gas Act 1986 (the 1986 Act). Cadent owns and maintains the gas distribution network in the North West, West Midlands, East Midlands, the East of England and North	This is noted.

London. The Apparatus forms part of Cadent's gas distribution network. 5. Cadent is required to comply with the terms of its Transporter Licence in the delivery of its statutory duties. It is regulated by the Network Code which contains relevant conditions as to safe transmission of gas and compliance with industry standards on transmission, connection and safe working in the vicinity of its Apparatus	
6. This submission is made on behalf of Cadent in response to the Examining Authority's (ExA) third round of written questions and the publication of the draft DCO (dDCO). In particular, this submission is made in response to Question 7.1.1.	This is noted.
7. For the purposes of the Planning Act 2008 and section 127, Cadent is a statutory undertaker and the land included within the order limits is statutory undertakers' land. Cadent require the protective provisions secured within the DCO to be in their preferred form to ensure that there is no serious detriment to the carrying on of Cadent's undertaking	The Applicant has set out its position in relation to sections 127 and 138 Planning Act 2008 and whether there is any serious detriment to Cadent's undertaking in document REP8-024.
8. We make this submission further to Cadent's relevant representation (the Relevant Representation) and Cadent's response to the first written questions at Deadline 2 – REP2-090 (the Cadent Response). Cadent set out its requirements for adequate protection in	This is noted.

the Relevant Representation and the Cadent Response.	
QUESTION 7.1.1 AND DDCO 1. The dDCO does not include adequate protection for Cadent's apparatus and the gas distribution network. It does not include the specific protection provisions that Cadent requires to prevent serious detriment to his undertaking.	The Applicant has set out its position in relation to sections 127 and 138 Planning Act 2008 in document REP8-024. Specifically, the Applicant has included at Schedule 14, Part 6 of the DCO (REP8-004) protective provisions for the benefit of Cadent, substantially in the form requested and agreed with Cadent. The two items that are not agreed between the parties relate to commercial issues. The Applicant's view is that the protective provisions provide the adequate protection required for Cadent, particularly in the context that in practical terms it will be Cadent (not the Applicant) carrying out any works that are required to protect their own infrastructure, as a result of the Project.
2. Cadent require all promoters carrying out development in the vicinity of their Apparatus to comply with various guidelines including: GD/SP/SSW22 – Safe Working in the vicinity of Cadent High Pressure's Gas Pipelines and Associated Installations; IGE (Institution of Gas Engineers) recommendations IGE/SR/18 Edition 2 Safe Working Practices to Ensure the Integrity of Gas Pipelines and Associated Installations; and the HSE's guidance document HS(G)47 Avoiding Danger from Underground Services a. The industry standards referred to above have the specific intention	The Applicant will be working to all required industry standards in carrying out any works that are required as a result of the Project. In addition, the protective provisions contained in Schedule 14, Part 6 (REP8-004) do not allow for the Applicant to carry out any works without the prior approval of Cadent.

of protecting: the integrity of the pipelines and thus the distribution of gas; the safety of the area surrounding gas pipelines; and the safety of personnel involved in working with gas pipelines.	
3. Cadent requires specific protective provisions in place for an appropriate level of control and assurance that the industry regulatory standards will be complied with in connection with works in the vicinity of Cadent's Apparatus.	The Applicant has included protective provisions for the benefit of Cadent in Schedule 14, Part 6 of the DCO (REP8-004) which are in the form requested by Cadent save for the two items discussed above as not being agreed by the Applicant. Those two items don't relate to compliance with industry standards – Cadent should not have any issues in this respect as the Applicant has agreed to comply with those requirements.
4. Cadent's preferred form of protective provisions are included at Appendix 1 (the Cadent Protective Provisions). The Cadent Protective Provisions are in Cadent's standard form and have been developed to afford full protection to Cadent and its undertaking. The Cadent Protective Provisions were submitted at Deadline 2 (REP2-091).	See the Applicant's response to paragraph 2.4 above.
5. The Promoter did not comment on the substance of the Cadent Protective Provisions in its response to the Cadent Response at Deadline 3 – REP3-021 (the Promoter's Deadline 3 Response) and has not commented on the substance of the Cadent Protective Provisions during the examination.	The Applicant has been liaising with Cadent throughout the Examination, including negotiating the protective provisions with Cadent's representatives. In addition, the Applicant has been updating the ExA on the latest position between the Applicant and Cadent at each deadline (see Document 9.10) and at the hearings where requested by the ExA.

6. As noted in the Promoter's Deadline 3 Response (at page 95) the Promoter is seeking extensive compulsory acquisition of freehold land, rights over land and temporary possession of land in respect of which Cadent has an interest and the Indicative Utility Diversion Drawings (APP-031) show the interaction between the Project and the Apparatus. This demonstrates the importance of securing the Cadent Protective Provisions.	This is noted and the Applicant has previously confirmed that it is content to agree to the principle of including protective provisions for the benefit of Cadent, and has included specific protective provisions for the benefit of Cadent at Schedule 14, Part 6 of the DCO (REP8-004).
7. In addition to securing compliance with industry standards to regulate the impact of the Project on the Apparatus, the Cadent Protective Provisions include necessary insurance and security measures which are required to be put in place before works which may affect Cadent's apparatus. These are required given the nature of the Promoter and the current financial standing of the Promoter, and security provisions are required to support the indemnity provided and to address a situation where the conditions of insurance are not met.	The Applicant has set out its position in relation to Cadent's protective provisions in document REP8-024. The Applicant can agree to the provision of insurance as requested, together with an indemnity up to a cap of £50million. In addition under Article 23 (Funding) of the DCO (REP8-004) states that the Applicant cannot exercise any powers in relation to compulsory acquisition under the Order unless and until a guarantee is provided and approved by the Secretary of State, or an alternative form of security is provided as approved. The Applicant cannot agree to the inclusion of an uncapped indemnity, nor to the inclusion of a requirement to provide security/guarantee to Cadent. The Applicant's position is that what is contained in its Schedule 14, Part 6 of the DCO (REP8-004) is more than adequate enough to protect Cadent's assets, particularly given that in practical terms it will be Cadent carrying out any works to its apparatus. On that basis it is the Applicant's

	position that there can be no serious detriment caused to Cadent's undertaking.
8. In particular, the security measures contained in the Cadent Protective Provisions are required in order to provide certainty that the indemnity afforded to Cadent can be relied upon in the event that damage is caused to the Apparatus and the gas distribution network. Article 22 of the DCO contains a requirement for a guarantee or security in respect of the exercise of compulsory acquisition powers by the Promoter. However, Article 22 only extends to liabilities in respect of compulsory acquisition powers and does not extend to damage that may be caused as a consequence of the construction or use of the Project. Therefore, the security provisions are essential for inclusion in the Cadent Protective Provisions	As mentioned at the reply to paragraph 2.8 above, the Applicant will be providing insurance in the sum of £50 million, for which Cadent will be an endorsed beneficiary. Article 23(3) (Funding) makes clear that any guarantee or security is given in respect of any liability of the undertaker to pay compensation under the Order. This would therefore apply to any of the liabilities the Applicant is assuming under the protective provisions with Cadent, not just in relation to the compensation payable through the exercise of compulsory acquisition powers. In addition, this is to be treated as enforceable against the guarantor or person providing the guarantee/security by any person to whom such compensation is payable, which would include Cadent. In light of the above, the Applicant's position is that adequate protection is provided for Cadent's benefit.
9. As with Article 22, this security is required given that funding is not in place for the Project and the Promoter will not secure funding until after the dDCO is made. The same justification set out in Paragraphs 2.4 of the Promoter's funding statement (REP7 – 0004) that necessitate Article 22 (in respect of compensation for compulsory acquisition) necessitate the security provisions in the Cadent Protective Provisions (in respect of liability for damages).	See the Applicant's position as set out at the reply to paragraph 2.9 above.

10. In the current energy and security of supply crisis, providing full and proper protection to the gas distribution network is increasingly important. The Cadent Protective Provisions will help to achieve this and to avoid serious detriment to Cadent's undertaking.	The Applicant has set out its position in relation to whether there has been any serious detriment to Cadent's undertaking in document REP8-024. The Applicant considers that with the benefit of the Protective Provisions in Schedule 14, Part 6 of the DCO (REP8-004) there is full and proper protection to the gas distribution network,
11. The Cadent Protective Provisions have been included in substantially the same form in a number of previous DCOs in order to afford protection to Cadent's. For example, substantially similar protective provisions are included in the following orders: The A585 Windy Harbour to Skippool Highway Development Consent Order 2020, The M42 Junction 6 Development Consent Order 2020, The A38 Derby Junctions Development Consent Order 2021, The A47/A11 Thickthorn Junction Development Consent Order 2022, The A47 Blofield to North Burlingham Development Consent Order 2022, The A57 Link Roads Development Consent Order 2022, The M25 Junction 28 Development Consent Order 2022 and The M54 to M6 Link Road Development Consent Order 2022.	The Applicant notes that the previously made DCOs listed are all highways schemes, which this Project is not. Highways schemes, by their very nature as linear projects will necessitate more interactions with gas pipelines (and other infrastructure) where there are a greater number of crossings. In addition, there are more interactions with apparatus in highways schemes because of the prevalent use of highways to lay apparatus within. This Project is not comparable to a highway scheme and as such shouldn't be used as a precedent. In addition, whilst Cadent's preferred form of protective provisions may be included on the face of the various DCOs listed, the Applicant cannot be certain that there are not agreements standing behind such DCOs which allow for alternative agreement to have been made which conflicts with that shown on the face of the DCO. As such, it is not appropriate to rely on such DCOs as precedent.
12. Cadent would be willing to enter into a side agreement to secure the Cadent Protective Provisions with the Promoter. Cadent has sought to engage in discussions with the Promoter to agree the	The parties are continuing discussions with a view to entering into an agreement prior to the close of the Examination. The Applicant will update the ExA prior to Deadline 10 of the latest position.

Cadent Protective Provisions and will continue to do so with a view to reaching agreement and submitting an agreed set of protective provisions to the ExA before the close of examination.	
13. Therefore, Cadent requests that the Cadent Protective Provisions are included at Part 4 of Schedule 14 to the dDCO.	Noted. However the Applicant has put forward its preferred Protective Provisions which would benefit Cadent in Schedule 14, Part 6 of the DCO (REP8-004)
14. Cadent expects that the form of the Cadent Protective Provisions to be submitted to the ExA if agreement is reached with the Promoter will be in the form of the Cadent Protective Provisions.	The Applicant has set out its position in respect of the Cadent Protective Provisions in document REP8-024.
NEXT STEPS 1. Cadent request that the Examining Authority recommend that the final dDCO, if made, includes the protective provisions in the form of the Cadent Protective Provisions and that the Secretary of State include the protective provisions in the form of the Cadent Protective Provisions in the final DCO (if made).	The Applicant has set out its position in respect of the Cadent Protective Provisions in document REP8-024.

6.0 APPLICANT'S COMMENTS ON ANGLIAN WATER'S DEADLINE 8 SUBMISSION

6.1 Anglian Water provided a submission at Deadline 8 [REP8-035] giving a general update to the ExA on engagement with the Applicant to date, as well as raising an issue regarding water resources needed to meet non-domestic demand.

6.2 This submission included a request that the Applicant provide a Technical Summary which sets out the water demands needed for the construction and operation of the Energy from Waste Facility. This has been provided to Anglian Water ahead of this submission and appended to this document as Appendix A.

7.0 APPLICANTS' COMMENTS ON UKWIN'S WRITTEN QUESTION RESPONSES AND DEADLINE 8 SUBMISSION

7.1 At Deadline 8 UKWIN have provided their responses to the ExAs third written questions [REP8-040] and to the further information submitted by the Applicant as REP7-032 [REP8-038]. They also provided the document 'Briefing on how incarnation harms recycling' [REP8-041] and an extract from 'Stop sort burn bury report for the Scottish Government' [REP8-041].

7.2 This section sets out the Applicant's response to certain points raised by UKWIN in these documents.

Comments on UKWIN's Response to REP7-032 (REP8-023)

7.3 Many of UKWIN's points have been raised before and the Applicant has addressed these in previous responses (see REP3-022, REP 6-032, REP7-032, REP8-023). It is not considered helpful to reiterate points already made to the Examination by responding point by point, and in this section the Applicant restates its position on the various broad headings, as it is considered that this might be more helpful for the Examining Authority. At Deadline 9 the Applicant and UKWIN are submitting a final and signed Statement of Common Ground which identifies those areas where the parties agree and those where they disagree.

7.4 Paragraphs 2-49 of REP8-038 relate to projections of residual waste arising which is suitable as a fuel for energy from waste. The Applicant's 'base case' projections assume that the Government's target of reducing residual waste per capita by 50% by 2042 is met. This is considered to be a

prudent (conservative) approach given that the Government has acknowledged that polices do not yet exist to deliver this target[1]. Recycling rates have plateaued in recent years[2].

7.5 The Government's target relates to all residual waste arising and not to the proportion of residual waste available as fuel. Hence judgement is required as to how to apply the Government target when projecting residual waste as fuel. The Applicant and UKWIN have chosen different approaches for this step. UKWIN assumes that the assumed 2020 figure for waste as fuel of 23.7mte is relatively certain and uses this as its starting point by applying a 50% reduction to that. The Applicant's view is that is likely to be an under-estimate (see electronic page 43 of REP7-032) and that the final residual target of 0.287te/capita is a more certain number as a starting point. The Applicant projects a value for residual waste as fuel of 0.253te/capita. As explained in REP7-032 (electronic page 43), uncertainty regarding how much residual waste is suitable as EfW fuel suggests a value for 2042 in the range 0.235-0.287te/capita and the Applicant's assumption of 0.253te/capita is below the midpoint of this range of uncertainty.

7.6 Paragraphs 50-56 of REP8-038 relate to the potential use of residual waste as a feedstock for proposed facilities manufacturing sustainable aviation fuel (SAF). The Applicant's comments on SAF are set out in REP6-042. All SAF projects are in early stages of development and there remains a high degree of uncertainty as to which, if any will come forward. The Applicant has included the new project which has planning consent in its analysis as a consented project.

7.7 Paragraphs 57-73 of REP8-038 relate to carbon capture and storage (CCS) potential. Contrary to UKWIN's assertion, the Applicant's position on CCS has remained constant throughout. As explained in REP5-037 (paragraphs 2.16-2.21), our position is that continued operation of all unabated EfW facilities is not compatible with the Government's Net Zero Target. This position is consistent with advice given to the Government by the Committee on Climate Change[3] and the Chris Skidmore Review[4]. The Applicant acknowledges that detailed policies to decarbonise the EfW fleet do not yet exist, but that is not a reason to ignore the Net Zero Target (just as the lack of policies to achieve waste reduction targets does not prevent consideration of those targets in the Applicant's analysis).

[1] "Consultation on environmental targets", DEFRA, May 2022. See electronic page 31.
[2] "Statistics on waste managed by local authorities in England in 2020/21", DEFRA, December 2021. See Table 3.
[3] "Progress in reducing emissions: 2022 Report to Parliament", Climate Change Committee, June 2022. See page 386
[4] "Mission Zero: Independent Review of Net Zero", Rt Hon Chris Skidmore MP, January 2023. See page 124.

7.8 The Applicant accepts that some existing EfW facilities will fit CCS, particularly if doing so will allow them to avoid the cost of CO2 emissions if (as expected) energy from waste is included under the UK ETS. It is not known which facilities will be able to fit CCS technically and economically, and REP3-040 sets out the approach adopted to deal with this uncertainty. It remains the Applicant's view that the facilities likely to fit CCS earliest and most economically (or with the lowest level of Government subsidy) are those located near CCS clusters.

7.9 Paragraphs 74-89 of REP8-038 relate to non-R1 capacity. The Applicant's position remains that non-R1 should not be considered as they are lower down the waste hierarchy than energy recovery facilities. UKWIN argues that the analysis should take into account the possibility that existing non R1 facilities might be able to convert to R1 status at some point in the future. The Applicant's position is that it is more appropriate to base the assessment on the known facts of which facilities have R1 or non-R1 status today, rather than speculate on whether facilities might be able to change status at some point in the future. The Applicant's view is that it is more likely that old life-expired non-R1 facilities will close in favour of new facilities, as in the example of Edmonton. New facilities will require planning consent and will need to be assessed based on planning guidance in force at the time.

7.10 Paragraphs 97-171 of REP8-038 relate to greenhouse gas points. It is noted that this is largely a repetition of material that has already been submitted to the Examination. The Applicant seeks as far as possible to avoid further tautology by doing the same.

7.11 With respect to paras 97-117 and metal recovery rates at the facility, UKWIN has not added to its previous arguments, which are essentially that the Applicant should model its operations, and those of its fuel supply chain, on Ferrybridge, since this appears to support its case. The Applicant declines to do so. It has set out the likely composition of residual waste entering its fuel supply chain, the effect of processing, and the composition of RDF received at the facility, including metals available for recovery. If it is of assistance to the Examination, the higher rate of ferrous metal removal in processing residual waste is associated with the greater frequency of magnetic separation in such operations.

7.12 -Regarding paras 127-132, UKWIN should be aware that the Government's Environmental Improvement Plan 2023 states that *"Methane's global warming potential is roughly 80 times greater per tonne emitted than carbon dioxide over 20 years, and 25 times greater over 100 years."* (page 155). This emphasises the significance of methane releases in contributing to climate change in the short term and the importance of eliminating the landfill of biodegradable waste as soon as

possible. The Applicant has provided to the Examination an assessment of the carbon benefits of the facility using the GWP of 80. In this context, UKWIN's focus solely on longer-term GWP values is expedient. Specifically, for para 132, UKWIN misunderstands the significance of the 20 year timeframe associated with a methane GWP of 80. Methane is released from landfilled biodegradable waste over a number of decades. Thus, the NLGEP will avoid methane releases with this heightened short term impact that would occur long after it ceases operations, including from residual waste RDF received in its first year of operations, across its lifetime and in its final year of operations. Such avoided emissions notably cluster around the UK's legal commitment to net zero by 2050, and demonstrate the part that the facility can play in meeting that commitment.

7.13 Responding to points contained within paras 136-151, The Applicant has modelled a conservative level of methane capture over the gassing lifetime of operating landfills. Whilst Leapfrog and Fichtner are entitled to make the assumptions quoted by UKWIN at paragraphs 142 and 143, these improvements in capture rates are not substantiated and are based on a baseline that Defra and its consultants believe to be too high. The hypothetical biostabilisation operations that UKWIN relies upon in paragraphs 145-148 would not be consistent with the Government's desire to eliminate biodegradable waste from landfill, nor can they be found in planning.

7.14 Regarding paragraph 142, Page 27 of Powerfuel's Technical Annex E produced by Leapfrog for planning application WP/20/00692/DCC submitted by Powerfuel Portland Limited stated for their Portland ERF in September 2020 that: "Landfill gas capture rates are assumed to increase gradually from 68% in 2024 to 75% in 2045, as it is likely that landfill performance will improve". Regarding paragraph 143, similarly, page 18 of Cory Riverside Energy's February 2021 Carbon Assessment for their Riverside Improvement Project NSIP application produced by Fichtner stated: "LFG recovery rates may improve as older sites are closed. We have allowed for a 0.2% improvement per year, starting at 68% in 2021 and ending at 72% in 2040".'

7.15 Despite UKWIN's assertion, the carbon assessment for Powerfuel was also prepared by Fichtner and so both of the alternative carbon assessments were prepared by the same consultancy. UKWIN has selectively quoted in both cases. For both Portland and Cory Riverside Energy, the central landfill gas capture rate was taken as 68%, with the sensitivity of this assumption tested using values of 52% to 75%. This is the same approach as has been taken by the Applicant in this case. However, for both Portland and Cory Riverside Energy, Fichtner also estimated the lifetime benefit of the plant by making a number of conservative assumptions about how waste composition, grid displacement and landfill gas recovery rates might change in the future. UKWIN's quotes in

paragraphs 142 and 143 are taken from the lifetime benefits section, in which Fichtner assumed that landfill performance might gradually improve over the lifetime of the project, starting from an already high figure of 68%.

7.16 UKWIN is suggesting that the highest figure which might be reached by 2040 or 2045 should be used as the central case for the whole project. This is not a reasonable comparison.

7.17 With respect to the supply of heat considered within para 156, UKWIN should be aware that the efficiency of CHP plant is superior to those that only generate electricity. This means that, whilst the benefits of electricity supply are reduced as steam is diverted from the turbine for the provision of heat, the benefits of that heat supply more than counterbalance this reduction.

7.18 The Applicant contends, in response to para 158, that the opportunity to increase carbon capture, the possibility that this will be required of EfW in the future, and its commitment to ensure this increase where it proves feasible is deserving of weight in the planning balance.

7.19 Regarding paras 159-161, if the carbon benefits of recycling plastics through the PRF had been taken into account, these would undoubtedly add to the significant net benefit that the facility will deliver. Given UKWIN's evangelism with respect to recycling, the Applicant finds it hard to understand why this would be in dispute.

7.20 Responding to paras 162-171, UKWIN repeats its previous submissions regarding electricity offset. It does not recognise that changes in demand, which might include substitutions in supply (eg because demand is shifted to off-peak periods and addressed through a different composition of the grid), as well as reductions in consumption (eg because of energy efficiency), are an entirely different area of enquiry from supply-side development. Tiresome though it is to repeat the point, the Defra guidance is clear that CCGT is the correct offset, and that is what the Applicant has used in its assessment. If that guidance was no longer appropriate, then the Department would have updated it. The footnote that UKWIN relies upon merely recommends an appropriate marginal factor. It does not employ the phrase "*Long-run Marginal Emissions Factors*" that UKWIN relies upon at paragraph 163 b).

7.21 Paragraphs 172-180 of REP8-038 relate to treatment of cement kiln capacity and SAF capacity in the RDF Supply Assessment. The Applicant's position on SAF is set out in paragraph 7.6 above. The future level of SRF use in cement kilns is highly uncertain – the Tolvik document referred to by UKWIN (paragraph 173 in REP8-XXX) surveys six different studies whose assumption for this ranges from zero to one million tonnes. Rather than pick an extreme end of this range, the Applicant has taken its assumption from current levels, which are far more certain. The Applicant acknowledges

that SRF consumption could increase in future but notes (as per the Tolvik report) that other alternative fuels are available to these facilities.

Comments on UKWIN's Response to ExA's third written questions (REP8-040)

7.22 The Applicant notes UKWINs comments relating to Policy from paras 1 – 21 and would refer the Examining Authority to its closing submissions (to be submitted prior to close of examination) which will set out the Applicant's consideration pg relevant policy.

7.23 In response to UKWINs comments on the ExA's Q17.0.1, UKWIN's response is largely repetitious and based on assertion, coupled with copious selective quotations from other parties' statements in other forums, shorn of context and lacking in evidence. To a large extent, its argument is that reduction, reuse and recycling/composting rates could and should be higher. This is, of course, a proposition that the Applicant agrees with, and that it has allowed for in its RDF supply assessment. It doesn't present any evidence that specifically addresses Q17.0.1.

7.24 Against para 28c) UKWIN does address the ExA's question, it refers to its *"… concerns about the adverse impacts of EfW (over-) capacity on recycling and the circular economy."* The Environment Agency has allayed those concerns in its response to Q17.0.1. The Applicant agrees entirely with the EA: there is no prospect that EfW over-capacity, were it to occur, would result in a diversion of waste from the higher levels of the waste hierarchy. For a waste producer or handler to allow this to happen would mean that it fails in its duty under Regulation 12 of the Waste (England and Wales) Regulations 2011 and would risk prosecution.

7.25 Responding to para 28 d) UKWIN asserts that over-capacity would drive down EfW gate fees and undermine the higher levels of the waste hierarchy. This is preposterous. Were there to be an over-supply of EfW capacity, this might lead to a degree of price competition within the sector, where gate fee is one criterion, along with transport distance, security of supply, environmental performance etc that constitute the relative attractiveness of one facility compared with another. However, any such competition would be within this level of the waste hierarchy, and is avoided currently because of reliance on more expensive landfill to meet the needs of waste producers. In a mature market, where the hierarchy is satisfied and landfill replaced by EfW, demand for EfW would not be 'elastic' beyond the need to manage residual waste. The higher levels of the waste hierarchy are protected by Regulation (see above), and reinforced by the considerable difference in gate fees to which the Applicant has already drawn attention in its response to Q17.0.1. Even were an EfW operator prepared to risk prosecution, its operating costs are such that a 'competitive' price would not be commercially viable.

7.26 UKWIN purports to present statistics that demonstrate that higher levels of residual waste treatment via EfW "*results in*" lower levels of recycling and composting. Its argument is statistically flawed. A correlation does not demonstrate cause and effect. The information presented graphically merely shows what happens to residual waste once recycling and composting separations have taken place, as shown by the relatively straight lines of equally low rates of landfill in paragraph 48. The Applicant does not claim a statistical inference from a single point, but nonetheless the local authority demonstrating the highest recycling rate (nearly 70%) relies on EfW for the management of its residual waste.

7.27 Finally, the gate fees for EfW versus recycling is not the only commercial factor to be taken into consideration. Local authorities also receive revenues from recyclables and therefore, as a positive market for recyclables continues to develop, there would be no incentive for an authority to trade an income for a cost by sending recyclables which could be sold to instead be recovered in an EfW facility. The WRAP gate fees report includes both gross and net figures for material recycling facilities, the difference between which demonstrates how considerable these revenues are likely to be.

8.0 APPLICANTS' COMMENTS ON AMY OGMAN'S DEADLINE 8 SUBMISSIONS

8.1 Further submissions from Amy Ogman were received at Deadline 8 including the following:

- Comments on the RIES (REP8-028);
- Comments on further information (REP8-027);
- Video and Accompanying text (REP8-026 and REP9-029).

Comments on the RIES

8.2 Updated versions of both a revised HRA (prior to Deadline 10) and Cumulative Impacts chapter (submitted at Deadline 9) will be submitted. These documents discuss the Project alone and cumulative/in combination effects for air quality at designated sites. The updated assessment concludes no likely significant effect to air quality at the European designated sites assessed.

Comments on further information

8.3 A revised HRA will be submitted at Deadline 9 which updates the information and responds to NE's queries surrounding piling and the related noise and vibration impacts to birds and lamprey.

8.4 The applicant will outline mitigation measures in the updated HRA, COCP and COMP. Specific restrictions of activities are no longer required by NE.

8.5 An revised Appendix A within an updated Chapter 10 will be submitted at Deadline 9. This document alongside the updated Cumulative Impacts chapter discuss the Project alone and cumulative/in combination effects for air quality at nationally designated sites. The updated assessment concludes no likely significant effect to air quality at SSSI's with the exception of Risby Warren SSSI. The Applicant and NE are in ongoing discussions to agree suitable mitigation / compensation for effects at this site.

Comments on Video and Accompanying text

8.6 Noise during operation of the proposed development has been assessed and reported in the ES noise assessment (Reference REP8-006). At properties in Amcotts, the assessment reports that at all times noise levels from the fixed plant (e.g. the ERF, carbon capture, concrete block manufacture) are predicted to be minor, with an exceedance over the background sound level of up to 5 dB(A). Higher levels are predicted during daytime loading/unloading events at the wharf and railhead with the potential to result in noise effects of up to moderate at the closest receptor.

8.7 Noise from loading/unloading will not be continuous. Typically, averaged over the year, it is anticipated that fewer than 1 vessel per day (~ 0.8 vessels) will load or unload at the quay as a result of the Project, with an unloading duration of approximately 3 hours. At the railhead, typically averaged over the year, it is anticipated that 1 train per day will load or unload and will take approximately 3 hours (plus half an hour at the start and end to split and reform the train).

8.8 Measures are included in the draft DCO to demonstrate that noise from the operation of the Project, including noise from loading and unloading activities, is minimised as far as reasonably practicable.

8.9 Startup events will occur after periods where the steam turbine has been shut down. The steam turbine will not normally be shut down although occasionally (approximately once or twice a year), planned shutdowns will take place for maintenance.

8.10 There is the potential for increased noise off-site during startup, normally for a period of approximately two to three hours. However, where a startup follows a planned shutdown, it will take place during the daytime.

8.11 In exceptional cases emergency shutdowns may also occur. In such situations, although it will still normally be possible for startup to take place during the day, this will depend on a number of factors and may not always be possible.

8.12 Local residents will be kept informed of planned maintenance startup events through the Project's ongoing stakeholder engagement process. As startup events are expected to be noisy only briefly, take place infrequently and, except for emergency shutdowns which would be rare, take place during the day, adverse effects are not considered significant.

9.0 APPLICANT'S COMMENTS ON BRIAN OLIVER'S DEADLINE 8 SUBMISSION

9.1 Further submissions from Brian Oliver were received at Deadline 8 including the following:

- Deadline 8 Submission [REP8-030]
- Objection to the Application [REP8-031]

Response to Deadline 8 submission

9.2 An assessment of noise from the Project is reported in the ES (REP8-006). The assessment follows the methodology in BS 4142:2014, and takes into account existing background sound levels as well as recommended standards in terms of the absolute levels of sound from the Project.

9.3 Mr Oliver raised concerns that his property in Amcotts is not well screened from the Flixborough Industrial Estate and can be downwind of noise sources to the east. He also raised concerns that his property is across a water body (the River Trent) which is acoustically reflective. As detailed in Section 5.3 of the ES noise assessment, a noise prediction software model was used implementing the ISO 9613-2 prediction method. This method allows prediction points to be added to represent residential receptors accurately at different locations relative to the Project noise sources. The nearest receptor to the site in the north of Amcotts is Charmaine and this receptor has been included in the model. A further receptor has been added to represent receptors further south in Amcotts (Inglenook). The area of hardstanding surrounding the site as well as the river are modelled as acoustically hard, reflective surfaces. Elsewhere the ground is modelled as partly absorbent. Ground topography as well as the main buildings close to the site of the Project have been included in the model. The ISO 9613-2 prediction method assumes downwind propagation conditions to all receptors.

9.4 Mr Oliver raised concerns about the field notes made by the surveyor whilst setting up noise monitoring equipment at Charmaine in Amcotts (as reported in paragraph 6.1.1.2 of Appendix B of the ES noise assessment). The notes state, "noise from activity on the quay dominates the noise environment. Other significant noise sources include birds". Although noise from activity at the wharf was apparent at the time the equipment was set up, noise monitoring was carried out at this location for a period of approximately 10 days, which allowed for a representative range of typical sound levels to be recorded and included in the baseline sound level which was used in the assessment.

9.5 At properties in Amcotts, the noise assessment reports that at all times noise levels from the fixed plant (e.g. the ERF, carbon capture, concrete block manufacture) are predicted to be minor, with

an exceedance over the background sound level of up to 5 dB(A). At night, the predicted noise levels at the nearest receptor (Charmaine) are within the range of external noise levels 40 – 45 dB, L_{Aeq} at night that provides a good standard for sleep within the building (BS 8233:2014).

9.6 Higher levels are predicted during loading/unloading events at receptors close to the wharf and railhead with the potential to result in noise effects of up to moderate at the closest receptor. This activity will take place during the daytime only. The noisiest activity (RDF loading and unloading at the Wharf) is predicted to just exceed the target level for daytime external amenity space (e.g. gardens) at Charmaine of 50 dB, LAeq (BS 8233:2014) by 1 dB which is not a noticeable difference. A 3 dB penalty is included to account for audible impulsive noise (resulting in a rating noise level of 54 dB, L_{Ar} in Table 15), although it is expected that noise mitigation could avoid this.

9.7 Noise from loading/unloading will not be continuous. Typically, averaged over the year, it is anticipated that less than 1 vessel per day (~ 0.8 vessels) will load or unload at the quay as a result of the Project, with an unloading duration of approximately 3 hours. At the railhead, typically averaged over the year, it is anticipated that 1 train per day will load or unload and will take approximately 3 hours (plus half an hour at the start and end to split and reform the train).

9.8 Measures are included in the draft DCO to demonstrate that noise from the operation of the Project, including noise from loading and unloading activities, is minimised as far as reasonably practicable.

9.9 In summary, the worst-case noise levels have been predicted taking into account the factors that affect propagation which Mr Oliver has identified (including downwind propagation across water), and the noise levels from the Project are predicted and compared to appropriate British Standard guidance in order to identify if they result in significant effects. The results showed that at night the noise from the Project will be minor, and even during the day when loading and unloading take place, predicted noise levels are just above the target levels for daytime external amenity space by 1 dB which is not generally considered a noticeable difference. Mitigation will be considered in detail following the procedures that are set out in the draft DCO to ensure that any noise impact is minimised.

Response to Objection to the Application

9.10 The Applicant acknowledges Mr Oliver's objection to the Application.

9.11 As a result of Mr Oliver's comments on the figures within ES Chapter 5: Air Quality (Document Reference 6.2.5) the figures have been updated to clearly show both Amcotts and Flixborough.

These sites were not purposefully excluded from these figures and the Applicant is happy to amend these the Chapter to include their location.

Appendix A – Technical Note on Water Demands

FICHTNER
Consulting Engineers Limited

North Lincolnshire Green Energy Park Limited

North Lincolnshire Green Energy Park

Technical note on water demands

1 Introduction

North Lincolnshire Green Energy Park Limited (NLGEPL) is developing the North Lincolnshire Green Energy Park at Flixborough Industrial Estate. Central to the energy park is an energy recovery facility (ERF), proposed to process up to 760,000 tonnes per annum of RDF, producing up to 95 MW gross electrical power.

NLGEPL has requested that Fichtner Consulting Engineers (Fichtner) provides an overview of water requirements at the project to respond to Anglian Water's representation which was published at Deadline 8 of the DCO examination process.

2 Previous correspondence

As part of the DCO application and examination, the North Lincolnshire Green Energy Park project has been in contact with Anglian Water.

Table 1: Previous correspondence with Anglian Water

Subject	Date of correspondence	Content
Water demands, protective provisions and SoCG	25/01/23	NLGEP stated the water demands of the facility, broken down to cover firewater and process demands. NLGEP noted that the process has been designed to minimise water usage, by including re-use of water where possible. NLGEP offered to arrange a call to discuss demands further.
Water demands and protective provisions	23/02/23	NLGEP explained the demands of the facility and stated it would provide demand curves through construction and operation, with and without the fire water tank.
Water demands	28/02/23	NLGEP provided demand profiles in litres/second for the facility through construction and operation, with and without the fire water tank demand.
Water demands	07/03/23 28/03/23	NLGEP noted that no response had been received from Anglian Water on the water demand curves.

3 Water demands

3.1 Potable and process water demands

The potable and process water demands for each of the facilities which make up the North Lincolnshire Green Energy Park are stated in Table 2 below, with the expected year of first operation for each plant.

Table 2: Facility demands

Plant	Demand (t/h)	Demand (l/s)	Cumulative demand (l/s)	Construction duration (years)	Year of first operation
ERF	8.53	2.40	2.40	4	2028
Carbon capture	5.33	1.50	3.90	3	2028
Residue reprocessing and concrete block manufacturing facility	2.97	1.00	4.90	1	2029
Hydrogen production	2.01	0.60	5.50	1	2030
Plastics recycling facility	1.71	0.50	6.00	2	2031

The demands are cumulative, with total demand increasing over time as the facilities are progressively commissioned. The process demand peaks with all facilities in operation at 6 l/s, which includes for all process demands and potable water demands. This value isn't adjusted to recognise the re-use of process water recovered from the carbon capture facility, and so represents a conservative estimate of demand.

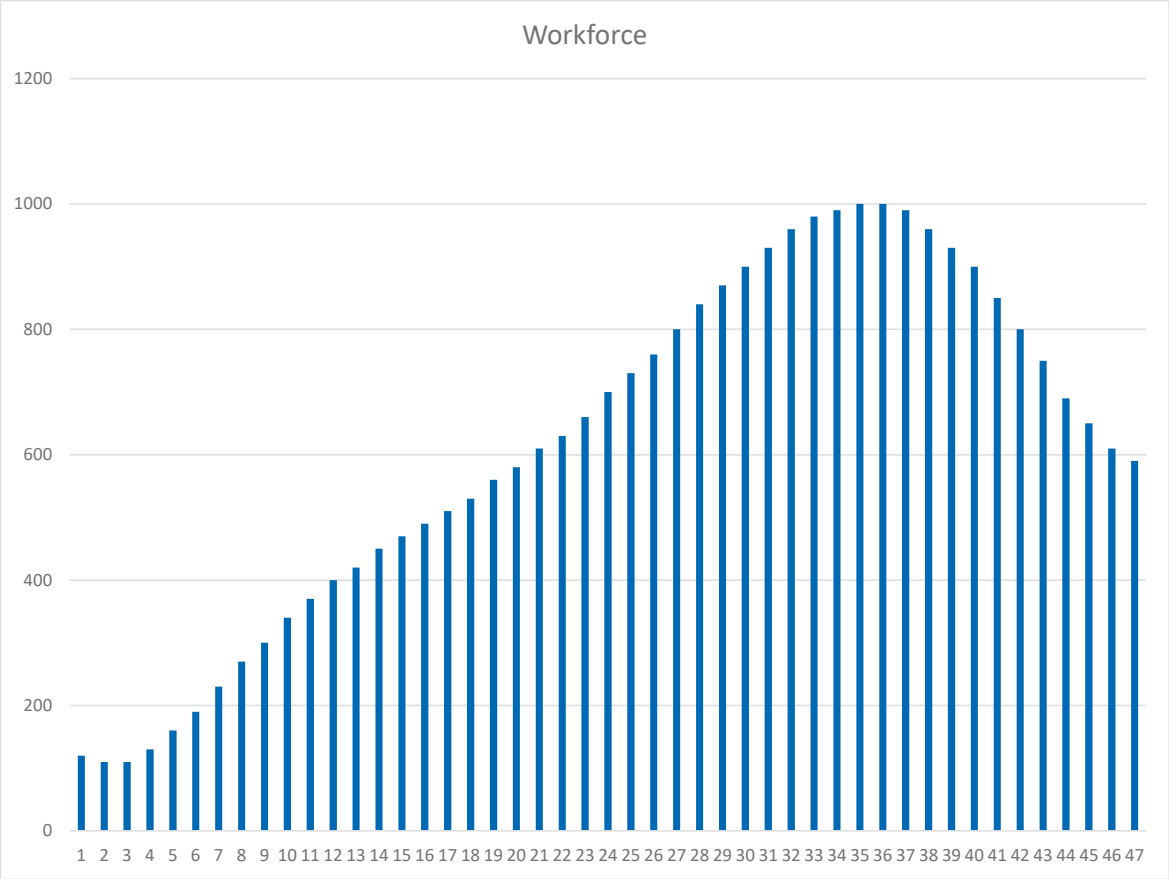
Additionally, the project will require water for the construction workforce, which is variable as the size of the workforce changes. A calculation for the maximum quantity of water required by the construction workforce is presented in Table 3.

Table 3: Construction workforce demands

Parameter	Unit	Value
Peak workforce	-	1,000
Demand per person	l/day	120
Length of workday	hours	12
Demand per worker per second	l/s	0.0028
Peak demand per second	l/s	2.8

The demand throughout the construction phase will typically be lower than this, as the average number of workers present on site is lower than the peak. A profile of the construction workforce for the ERF is shown in Figure 1.

Figure 1: Construction workforce profile

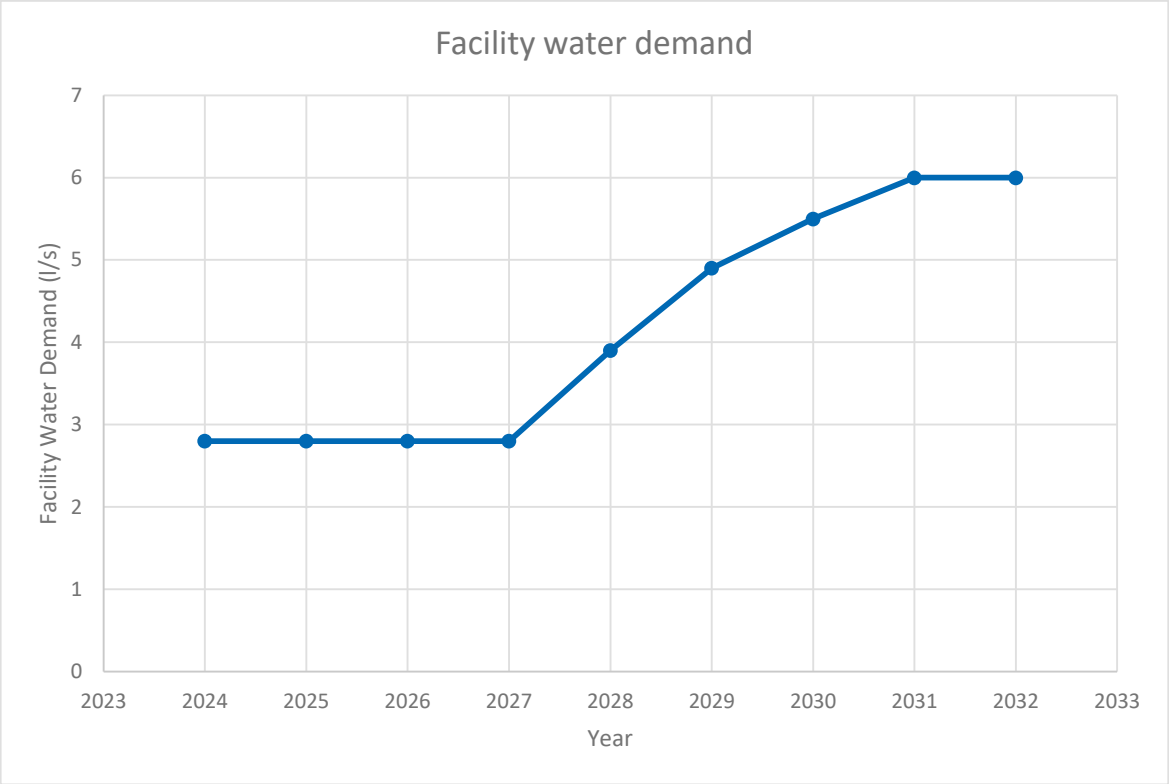


The overall demand of the facility is stated in Table 4 and shown in Figure 2.

Table 4: Overall project demands

Year	Demand (l/s)
2024	2.8
2025	2.8
2026	2.8
2027	2.8
2028	3.90
2029	4.90
2030	5.50
2031	6.00
2032	6.00

Figure 2: Overall facility demands



3.2 Fire water demands

The ERF will contain a fire water tank, which is needed as a store of fire-fighting water for the facility. The fire water tank has been sized in line with the requirements of NFPA 850. The size of the fire water tank is stated in Table 5.

Table 5: Fire water tank parameters

Parameter	Unit	Value
Firefighting water requirement	l/s	206
Hours of water required	hours	2
Required volume	m^3	1,483
Buffer storage	%	20%
Volume	m^3	1,780
Hours of firefighting water supplied	hours	2.4
Diameter	m	12.0
Height	m	16.8

There is often a requirement from plant insurers for the ability to refill two hours supply of fire water within eight hours in line with NFPA 850. Following a fire, the plant would not be allowed to restart or conduct any hot works until the fire water tank is refilled with two hours of fire water demand.

Refilling of the fire water tank in eight hours will require a water supply rate of 51.5 l/s at NLGEP. This quantity of water would be required very rarely, only in the event of ~~following~~ a fire. However, the supply from Anglian Water would be required to be sized for this flowrate.

Alternatively, BS-EN 12845 (Fixed firefighting systems, automatic sprinkler systems. Design, installation, and maintenance) may be followed in preference to NFPA 850. This standard requires a refill time of 36 hours for the fire water tank. Following this guidance, the fire water supply requirement is 11.44 l/s, which represents the minimum fire water requirement.

3.3 Overall demands

The overall demand of the facility is dependent on the standard used to refill the fire water tank. The peak overall demand, which includes the fire water tank refill flow rate, is stated in Table 6 and shown in Figure 3 for adherence to both NFPA 850 and BS -EN 12845.

Fire water tank refilling is not a constant demand, and the figures shown in Table 4 represent the peak flowrate, experienced when refilling the fire water tank. Under this condition, it is assumed that the ERF, carbon capture plant and ash reprocessing and concrete block manufacturing facility are not in operation.

Table 6: Overall project demands

Year	Potable and process demands (l/s)	Potable and process demands with NFPA 850 fire water tank refill (l/s)	Potable and process demands with BE-EN 12845 fire water tank refill (l/s)
2024	2.80	2.78	2.80
2025	2.80	2.78	2.80
2026	2.80	2.78	2.80
2027	2.80	2.80	2.80
2028	3.90	51.50	11.44
2029	4.90	51.50	11.44
2030	5.50	52.10	12.04
2031	6.00	52.60	12.54
2032	6.00	52.60	12.54

Figure 3: Total facility water demand