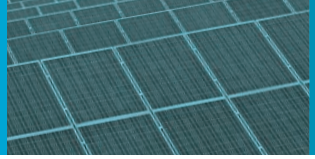
BANKS Renewables
development with care

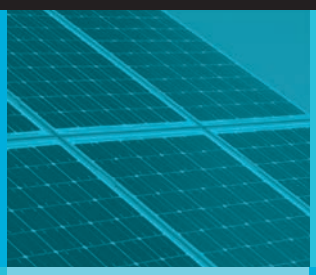
Barnsdale Solar

Solar Park Proposal

Planning Application • November 2020

Non Technical Summary





BANKS

Introduction

Banks Renewables (Barnsdale Solar Park) Ltd is proposing to develop a solar park on land to the south of Kippax and north of Allerton Bywater.

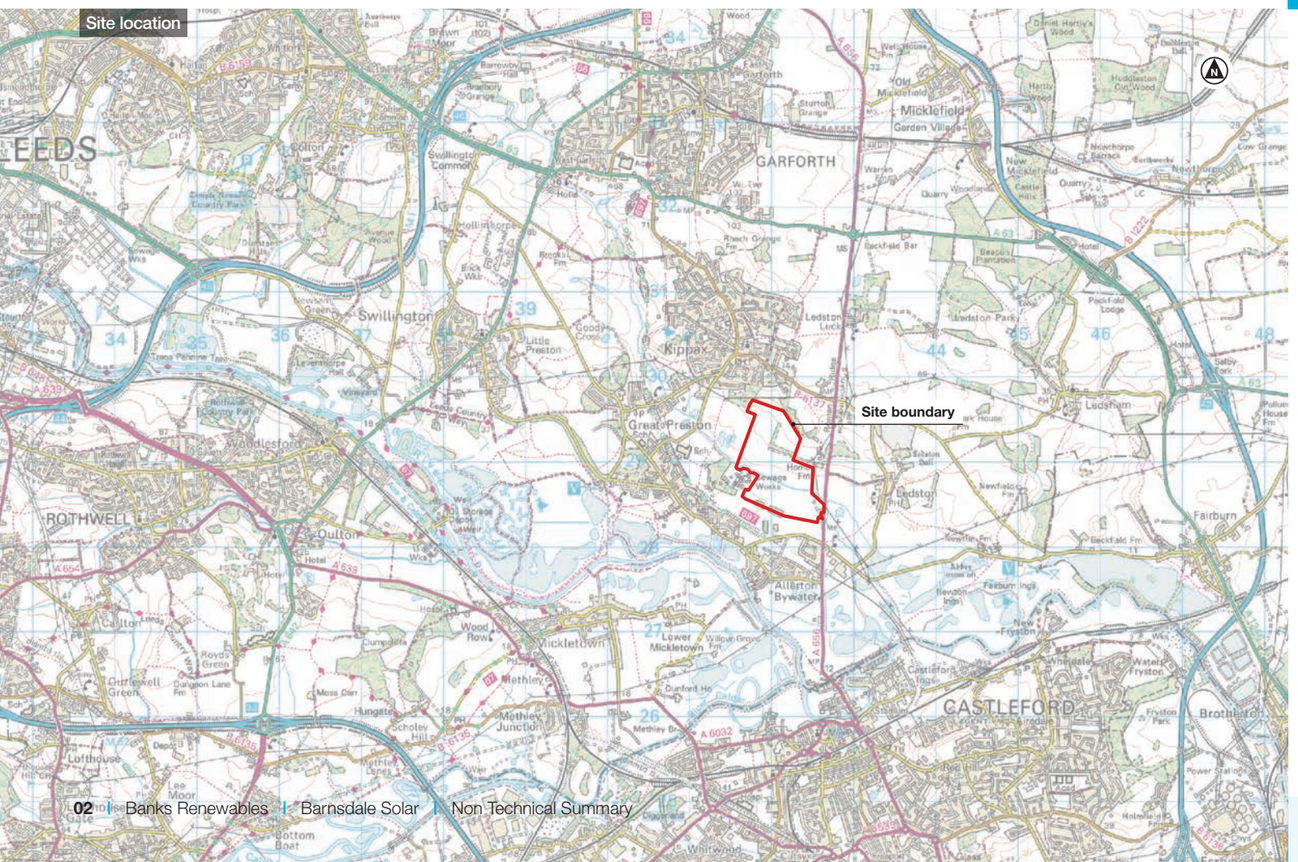
The site is situated within the authority of Leeds City Council. If consented, the proposed development will generate an estimated 40 megawatts (MW) of renewable electricity.

This non technical summary summarises the findings of the Environmental Statement (ES) which accompanies the planning application submitted to Leeds City Council for Barnsdale Solar Park (the proposed development).

The ES collates information and analysis regarding the environmental effects of the development. This non technical summary contains a description of the development, consideration of the potential environmental effects and details the measures taken to prevent and reduce these effects to acceptable levels.

It also summarises the findings of the various studies for topics that were 'scoped out' of the Environmental Impact Assessment (EIA) and therefore not included in the ES.

Site location



Banks Renewables

Banks Renewables is part of the Banks Group and we provide renewable energy solutions that help meet our society's demand for energy in a sustainable and considerate way.

Energy for everyone's benefit

Banks Renewables identify suitable sites for renewable energy generation such as solar parks and onshore wind farms across the UK. Local to Leeds, our Hook Moor Wind Farm has been generating energy since 2016. Hook Moor provides clean, renewable electricity for around 7,000 homes every year.

We actively involve local communities at all stages of the development process and we are committed to our *development with care* approach.

Development with care

Development with care is at the heart of our way of working. It ensures that we conduct our activities in a responsible and respectful manner with consideration for the environment, the local communities in which we operate and for our customers, employees and suppliers.

We understand that our developments can make significant changes to the environment and to society. Our development with care approach ensures that we deliver positive environmental, economic and social benefits to the local communities that host our projects.

Why solar? Why this site?

Meeting our need for sustainable electricity

The UK Government has set ambitious targets for renewable energy generation to help reduce green house gas (GHG) emissions and combat climate change. In order to meet these targets new, renewable infrastructure and generating facilities must be developed. By choosing electricity generated from solar technology we can help meet our energy targets and reduce GHG emissions whilst protecting and promoting local wildlife.

The cost for developing solar technology has also significantly reduced in recent years - meaning solar is now one of cheapest ways to produce electricity, which should help keep household energy bills low.

An ideal site for solar

After undergoing a detailed land search, the Barnsdale Solar site was identified as having the best opportunity to create a solar park that links directly into the electricity substation adjacent to the site.

The local electricity grid has sufficient capacity to accommodate our proposed south facing Barnsdale site.

An existing access point off Barnsdale Road will be used as the entrance to the development and the site is well screened with mature trees and hedgerows.

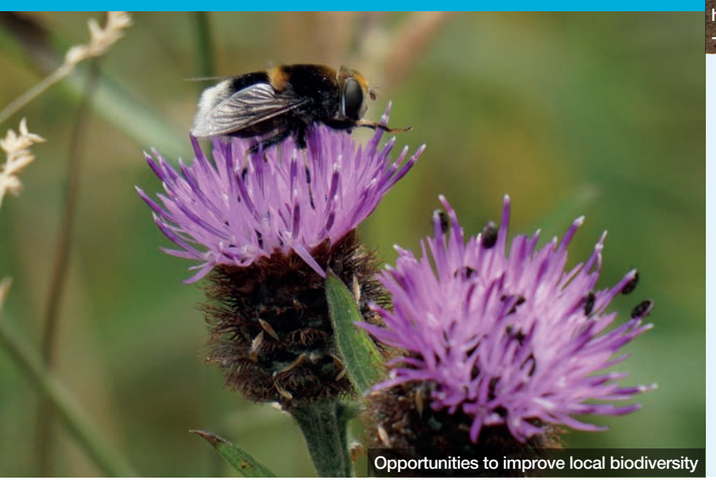
Benefits of the project

The development would contribute significant environmental and socio-economic benefits at both a national and local level.

Environmental

- Produce an indigenous energy supply, reducing reliance on imported fossil fuels.
- Reduce greenhouse gas emissions by harnessing power from the sun, equating to CO_2 savings of 9,364 tonnes per year or 374,560 tonnes over its lifetime. This is the equivalent to taking approximately 3,605 petrol cars off the road each year.
- Produce up to the equivalent to the annual electricity consumption of approximately 12,000 homes.
- Make a positive contribution to Leeds City Council's target of Net Zero carbon emissions by 2030.
- Ensure a significant net gain in biodiversity across the site far exceeding the 10% expected.

Our Hook Moor Wind Farm, near Micklefield Leeds has a community fund that helps fund local projects - a Barnsdale Solar Park would create a similar fund.



Opportunities to improve local biodiversity

Social

- Around £20,000 community fund for local groups and projects every year (total £800,000 over 40 years).
- Helping to keep national household electricity bills low.

Supporting Aberford Bowling Club

Economic

- Represent at least £25 million investment in the economy.
- Direct and indirect jobs on site during construction period.

Our proposal

Key project figures

SITE AREA:
Approximately 87.7 hectares (ha).

It is estimated that total land-take of the proposed development following construction would be approximately 50ha or approximately 55% of the total site area.

This would be occupied by the solar panels and their associated infrastructure such as access tracks, inverters, a sub station and control building compound and electrical infrastructure and a temporary construction compound and set down area.

NUMBER OF PANELS:
Approximately 2,900 arranged in rows

PANEL HEIGHTS:
Approximately 3.55m

INSTALLED CAPACITY:
Approximately 40MW

ROADS AND TRACKS:
2.1km new access tracks and upgrading of 1.2km existing tracks. Upgrading of existing access junction off Barnsdale Road (A656)

LIFE SPAN:
40 years operational

CONSTRUCTION PERIOD
Approximately 6 months

VEHICLE MOVEMENTS:
Approximately 35 per day during the construction period.

GRID CONNECTION:
The proposed development would be connected to the grid at the existing Ledston substation adjacent to the site.

CURRENT SITE USE:
Agriculture

Main elements

Solar Panels

The solar panels will be manufactured from silicon and glass on a metal backing. Subject to agreement with the Council, the finish and colour of the panels is likely to be dark blue or black. The panels will be approximately 3.55m at their highest point.

Foundations

The foundations for the panels will be driven or helical piles. Disturbance of the ground will be minimised as far as is practical. Considering the proposed panel foundation method, topsoil stripping will not be required, with minimal impact on the current ground conditions with the exception of increased activity during installation and no deep excavations will be required. Limited excavation strip will be required for the inverter concrete pad foundations, with only topsoil strip and minimal ground preparation works expected.

Control Building Compound

The control building and adjoining compound including clearance, security, substation, access, storage and fencing with be approximately 40m by 40m. It will include a 66/33 kV outdoor transformer with switchgear and a control building, likely to contain a switch room with 33 kV switchboard and protection equipment; a development SCADA control room; WC facilities; Metering; and a DNO control and protection room.

Cabling and grid connection

Underground cables will generally be laid alongside the access tracks. The electrical output from the development will require to be connected to the national grid and the most viable point of connection is into the network at the existing Ledston substation which is directly adjacent to the site. An application to secure a connection has been submitted by Banks Renewables.

Site access, tracks and compound

The construction of approximately 2.1km of new access tracks and the upgrade of approximately 1.1 km of existing tracks will be required to allow the development to be constructed and operated. The tracks would typically be 4m wide and would be designed to allow the efficient drainage of rain water. A temporary compound would be required during the construction phase for the storage of plant and materials, and to provide site workers with welfare facilities.

Traffic and site entrance

Access to the site is proposed to be taken from Barnsdale Road. All construction and operational traffic will access the proposed development Area via this junction, and it is anticipated that traffic will arrive from both North and South along from the main artery roads of the A1 and M62 respectively.

The existing entrance junction into the proposed development Area is currently used for agriculture. Minor junction upgrade and widening works will be required here, taking into consideration the existing site junction constraints.

The construction period would constitute the main requirements for vehicular access to the site. The construction phase will last approximately 6 months. The majority of vehicle movements would result from delivery of the panel components, transformers, and access track control building and substation construction materials. HGV and construction routes will require access through the A656 to reach the site, with no Abnormal Load Vehicles expected as part of the construction traffic. Once constructed the majority of maintenance can be carried out by technicians in a light commercial van or similar vehicle.

Site selection and design

When identifying potential sites for a solar park, Banks Renewables seek to identify sites which are not constrained by a range of factors.

A suitable grid connection is one of the fundamental issues for a solar park and West Yorkshire was considered to be a suitable area to start a search for solar park sites adjacent to suitably sized grid connections.

A sieve mapping process of potential areas within West Yorkshire was then undertaken to identify areas that have the potential for solar park development. The constraints used to identify potentially viable solar parks were set out to identify the most suitable sites upon which to focus more detailed site assessment work. A full detailed alternative sites assessment is included as part of this Application. There are a wide range of potential technical and environmental constraints which need to be taken into account during the potential location and eventual design of a solar energy development. These were considered in detail during the site search process, which culminated in the site being identified as being suitable in planning and environmental terms as well as being capable of being physically developed and supplying electricity on a viable basis to the National Grid.

The design evolution process for the proposed development's site design has sought to balance increasing the efficiency of the solar park with ensuring that the environmental impacts remain acceptable.

Design considerations

Topics scoped into the environmental impact assessment (EIA)

Landscape and visual impact

An assessment has been undertaken by a Chartered Landscape Architect to assess the landscape and visual effects that would result from the proposed development.

It has been assessed that the effects on landscape character from the proposed development would not be significant and would be confined to the site itself and its immediate surroundings. This is due to the intervening vegetation and built development and undulating topography of the surrounding area. Effects on the wider landscape character of the surrounding areas would also not be significant.

Views of the proposed development from the range of visual receptors: properties, settlements, users of the transport and rights of way network and recreational receptors have been assessed.

The proposed development would be screened by intervening built development from the majority of the nearby settlements but some significant adverse effects at completion are identified for a small number of properties on the southern edge of Kippax and at Home Farm, to the east of the site. In the long term, as mitigation planting matures, the level of effects is predicted to reduce to less than significant.

Some significant adverse effects at completion of the proposed development are also predicted for users of the permissive footpath between Kippax Meadows and Woodlands Croft, also on the southern edge of Kippax. However, the residual effect would be less than significant as mitigation and enhancement planting takes effect.

Elsewhere it is not considered that the proposed development would result in significant adverse effects on nearby visual receptors.

Visual assessment

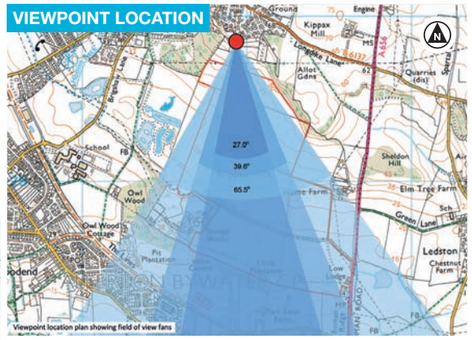
The following pages show what Barnsdale Solar Park would look like from a selection of viewpoints within the vicinity of the site.

These viewpoints have been selected and agreed with Leeds City Council. They have been produced for Banks Renewables by professional landscape architects in accordance with the Landscape Institute and other guidelines.

Design considerations

Comparative visualisations showing the site once built and ten years after construction

VIEW FROM: Footpath between Kippax Meadows and Woodlands Croft



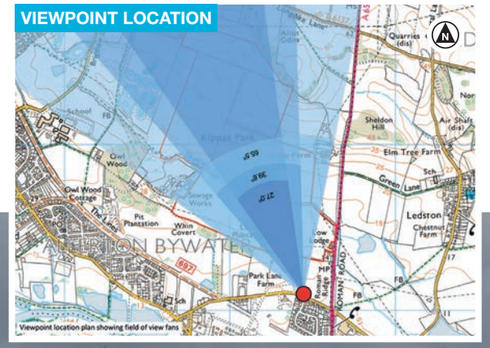
Photomontage - site after construction

Photomontage - site ten years after construction

Design considerations

Comparative visualisations showing the site once built and ten years after construction

VIEW FROM: Park Lane



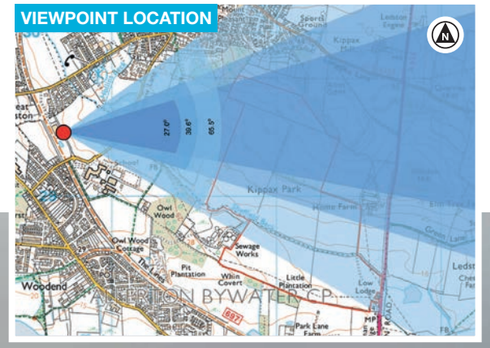
Photomontage - site after construction

Photomontage - site ten years after construction

Design considerations

Comparative visualisations showing the site once built and ten years after construction

VIEW FROM: Brigshaw Lane



Photomontage - site after construction

Photomontage - site ten years after construction

Design considerations

Archaeology and cultural heritage

An assessment of the potential direct impact to buried archaeological remains through ground disturbance and the potential indirect impact to designated heritage assets through changes within their settings was carried out. The assessments were done in full accordance with guidelines prepared by the Institute for Archaeologists and Historic England.

In respect to potential buried archaeological remains, the assessment established that there is no evidence to reasonably indicate the potential for the presence of unknown remains which would preclude development with baseline evidence showing the former presence of extensive open cast coal workings across the site.

In respect to heritage, a potential for less than substantial harm has been identified in respect to one Grade I Listed Building (Ledston Hall) and two Grade II Listed Buildings (a barn 10m west of Home Farm and Low Lodge and its associated Gate Piers and Walls). In all instances the less than substantial harm identified is anticipated to be limited in scale.

Noise

The potential noise associated with the proposed development has been assessed at the nearest existing noise sensitive receptors.

Details of 'best practice' management and control measures are suggested to ensure that impacts are minimised during the construction phase.

An assessment of the noise generated by the operational phase of the proposed development has been carried out in accordance with BS4142. The assessment is based upon noise emission data for typical pieces of equipment which have been assumed for the proposed development.

When considering the site in context, the noise generated by the solar farm will have a low and not significant impact during the daytime and night-time periods at the existing noise sensitive receptors.

Ecology and Ornithology

A number of specialist ecological and ornithological surveys have taken place on the site in order to gain a full understanding of the ecology of the site and the sensitivity of the species in the surrounding area. The site lies out with any internationally designated areas for nature conservation. The site is adjacent to Kippax Meadows Local Nature Reserve.

The layout of the proposed development has been designed to minimise disturbance on sensitive habitats and species during construction and operation. Existing trees and hedgerows throughout the site will be retained and additional planting proposed.

A buffer from development along the Sheffield Beck and the Leeds Habitat Network offers protection. A range of ornithological surveys have been undertaken to assess the potential impacts of the proposed development on birds.

Surveys were also carried out for bats, great crested newt and otter. The surveys recorded no evidence of otter. Great crested newt was recorded in waterbodies outside the site. Commuting and foraging bats were recorded throughout the site but no roosts were identified.

A Habitat Management Plan (HMP) will be prepared and this will include additional tree and hedgerow planting to offer screening and enhance the environment and also large areas of grassland including wildflower grassland. It is anticipated that a significant net gain in biodiversity can be achieved on the site including a net change of around +85% for overall habitat units and +30% for hedgerow units. This far exceeds the expected 10% net gain.

Flood Risk and Drainage

A flood risk assessment has been carried out and considers the appropriateness of the site, in terms of flood risk and drainage, for the proposed development. The site is currently undeveloped, consisting of agricultural fields which appear to drain via infiltration and overland flow following the natural fall of the land. Based on existing gradients which are generally north to south to the low valley area of the Sheffield Beck, any overland flows would drain to the watercourse.

The proposed development is located within Flood Zone 1 and as such is deemed to pass the Sequential and Exception Tests. A short section of the existing and extended access track is located in Flood Zone 2 and 3. The vulnerability class of the development is 'less vulnerable' and such developments are considered to be suitable for sites classified as Flood Zone 1, 2 and 3a.

The seeding of grass across the site and underneath the solar panels will maintain the existing drainage characteristics by retaining infiltration, transpiration, evaporation and ground runoff. On this basis there is no increase in flood risk on or off the site from the proposals. The risk of flooding to the site from sewers, overland flow and groundwater is low. The Sheffield Beck is maintained, and a development buffer is provided.

There are no local site-specific risks that would adversely affect the Flood Zone categorisation and/or any significant increase in off-site flooding risks as a result of the development. On this basis, the site is considered suitable, in terms of flood risk, for the type of development proposed.

Other considerations

Transport and Access

The construction period is expected to last around 6 months and the impacts on traffic flows from the proposed development are expected to be minimal.

During the peak construction period there would be approximately 35 journeys per day, which would include any HGV deliveries, staff commuting and miscellaneous small vehicles. Any deliveries that could create disruption will be timed to ensure delivery occurs outside of peak hours.

During the operational phase typically no more than 10-20 journeys are expected in any year associated with the operation and maintenance of the site. The route proposed is suitable for HGV loads.

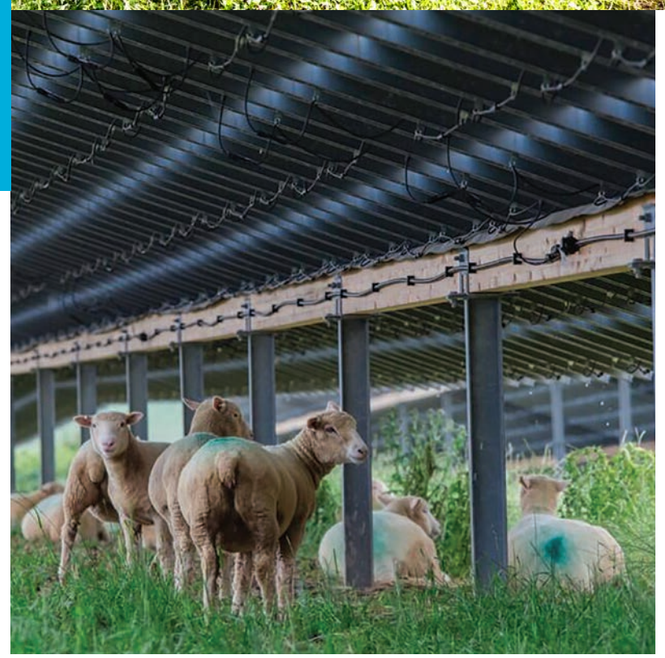
Some modifications will be required to the site entrance but otherwise all required access modifications are expected to be associated with the construction of onsite tracks.

Agricultural land classification

An agricultural land classification (ALC) has been carried out and the results show an ALC Grade of 3b (moderate quality agricultural land) across the site.

Geology and ground conditions

The site layout has been informed by initial geological assessments. A detailed Phase 2 assessment incorporating intrusive investigation and monitoring will be undertaken post consent to determine the requirement and scope of protective measures.



Carbon savings

The proposed development would result in carbon savings by displacing fossil fuel generated electricity.

The solar park would save 374,560 tonnes of carbon dioxide emissions over its 40 years operating period which is equivalent to the emissions from supplying fossil-fuel source electricity to 12,000 average homes.

Safety

Solar parks have an excellent safety record. Experience indicates that properly designed and maintained solar panels are a safe technology. A number of measures would be undertaken to ensure that the site is secure during the operation of the development. These include (amongst other measures) monitoring of the panels to detect any acts of vandalism or mechanical problems and regular site visits to the site by a solar technician.

Glint and Glare

A Glint and Glare assessment examined the possible effects upon surrounding road users and dwellings as well as aviation activity associated with Leeds Bradford Airport. Furthermore, a high-level aviation assessment was carried out for Leeds East Airport.

The analysis has shown that solar reflections from the proposed development towards the aviation receptors at Leeds Bradford Airport are not geometrically possible. A high-level assessment was carried out for Leeds East Airport and ruled out significant impacts upon aviation activity.

Therefore, no impact is expected for the identified airports and no mitigation is required. While the results of the analysis have shown that reflections from the proposed development are possible towards 59 of 71 identified dwelling receptors, the review of available imagery showed that screening in form of vegetation or other buildings will block all views of the reflective area. Furthermore, the proposed additional screening will further reduce views of the proposed development. Similarly for roads, while the results of the analysis have shown that the reflections from the proposed development are geometrically possible towards 13 out of the 18 identified road receptors, the review of available imagery showed that screening in form of vegetation will block all views of the reflective area.

Conclusion

The Barnsdale Solar Park proposals have been subject to extensive site identification and design process involving on-going consultation.

Barnsdale Solar Park undertook an environmental impact assessment exercise and has prepared an Environmental Statement (ES), which has examined in great detail the potential environmental effects of the proposed development.

The ES concludes that the solar park will only have a small number of significant effects and that the site is an appropriate location for the proposed development and would contribute positively to renewable energy generation targets.

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Further information

FURTHER INFORMATION REGARDING THIS PLANNING APPLICATION CAN BE VIEWED AT THE FOLLOWING ADDRESS:

Leeds City Council Planning Department
9th Floor East
Merrion House
110 Merrion Centre
Leeds
LS2 8BB

THE APPLICATION CAN BE VIEWED ONLINE AT:

www.leeds.gov.uk/planning

www.banksgroup.co.uk/projects/renewables

CD COPIES OF THE APPLICATION CAN BE OBTAINED BY CONTACTING BANKS RENEWABLES ON THE DETAILS SHOWN BELOW

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HJB/4113/62. Published November 2020. Printed on paper from sustainable sources.