Miller Turner Group

Proposed Energy Recovery Facility at Red Scar Industrial Estate, Preston Request for a Scoping Opinion from Lancashire County Council as Waste Planning Authority under Regulation 15 (2) (a)

SCOPING REPORT

Town and Country Planning Act 1990 (as amended)
Town and Country Planning (Environmental Impact Assessment) Regulations 2017 ("the Regulations")

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1.0 Introduction

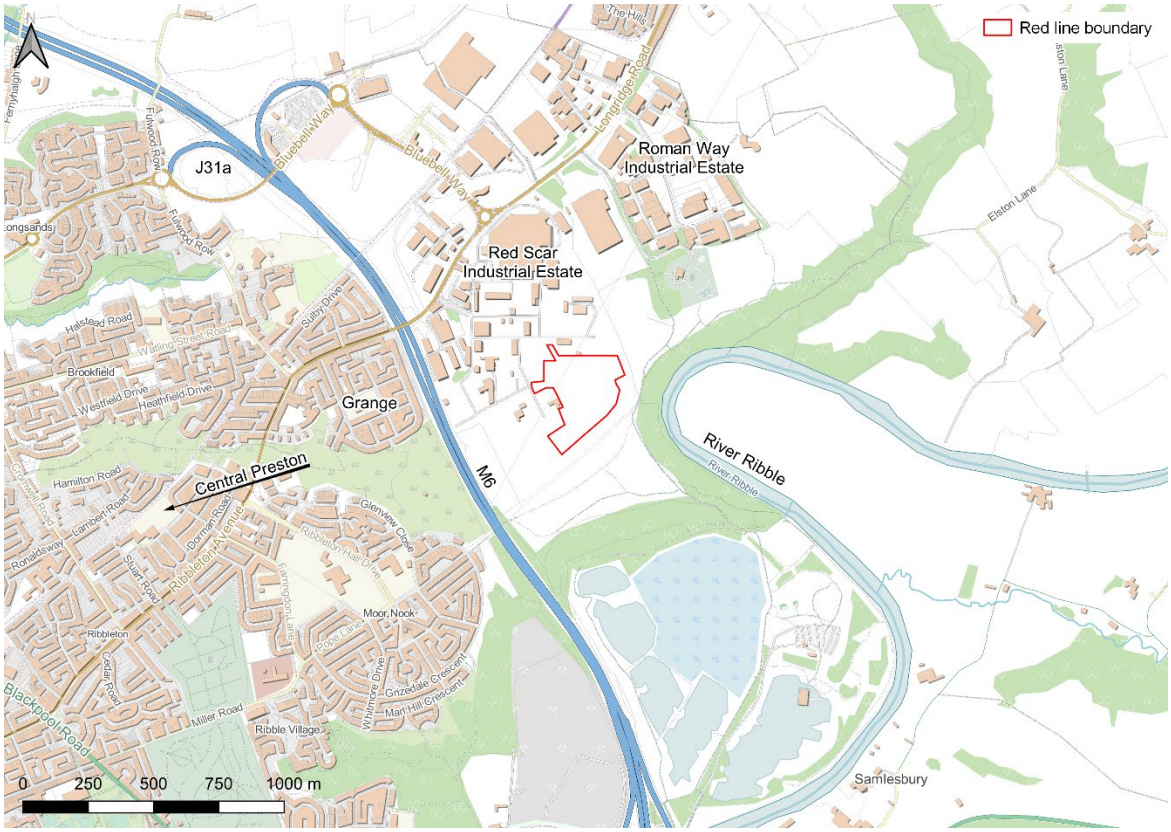
1.1.1 Miller Turner Group ("MTG"), (the "Applicant") intends to submit a full planning application for an Energy Recovery Facility ("ERF") plant at Red Scar Industrial Estate ("RSIE"), Preston, Lancashire (the "Proposed Development").

1.1.2 The Red Scar ERF will have an electricity output of around 40 megawatts (MW). The Proposed Development will be connected to the electricity grid network and may also supply local electricity consumers directly via "private wire". Up to 40MW of heat may also be supplied to local consumers via steam or hot water pipelines. To produce this energy output the ERF will process up to 395,000 tonnes per annum of non-hazardous residual waste and refuse-derived fuel.

1.1.3 A summary of the Proposed Development is at Section 3.

1.1.4 Figure 1.1 shows the location of the Proposed Development, a site of approximately 7.3 Hectares or 18 acres indicated by the red line. Figure 1.2 illustrates the site and immediate surroundings indicated by the dotted square in more detail. Further maps are included in the Appendix.

Figure 1.1: Site Location



2.0 The Purpose and Structure of the Scoping Report

2.1.1 The Applicant will carry out an Environmental Impact Assessment ("EIA") in accordance with the requirements of the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (the "Regulations") in order to assess the likely significant environmental effects of the Proposed Development. The Applicant will then prepare an Environmental Statement ("ES") to be submitted with the planning application for the Proposed Development to Lancashire County Council ("LCC"), which is the Waste Planning Authority ("WPA") and the relevant planning authority for the determination of the planning application.

2.1.2 Scoping is a process which enables a person minded to make an EIA application (in this case, the Applicant) to ask the relevant authority to determine the scope and level of detail to be provided in the ES by issuing a "Scoping Opinion". Regulation 15(2) describes what such a 'scoping request' must include (see paragraph 2.3 below).

2.1.3 Regulation 15(2)(a) sets out the information that must be provided to the relevant planning authority to enable it to adopt a Scoping Opinion. This is set out in the following table which also identifies where in this document that information is provided.

Regulation 15(2)(a)	Information requirement	Where provided in this document
(i)	Plan sufficient to identify the land	Figure 1.1 and plans appended
(ii)	Brief description of the nature and purpose of the development, including its location and technical capacity	Section 3
(iii)	Explanation of the likely significant effects of the development on the environment	Section 4
(iv)	Such other information or representations as the person making the request may wish to provide or make	Section 5

2.1.4 The EIA will classify environmental issues as principal and secondary. A suggested list of principal issues is contained in Section 5 of this document.

2.1.5 For each principal issue the ES will identify the baseline conditions and describe them. The effects of the Proposed Development, including inherent mitigation, will be assessed on sensitive receptors.

2.1.6 Each effect will be categorised as:

- Adverse, neutral, or beneficial in nature

- Temporary or permanent in duration
- Minor, moderate, major or substantial in significance
- Local, regional, national or international in geographic extent.

2.1.7 The purpose of the Scoping process includes identifying which issues are likely to fall into which of the categories listed in paragraph 2.6. Principal issues are likely to be those with potential for being at adverse in nature, permanent, of major or substantial significance, and or of greater than local geographical extent.

2.1.8 EIA is an iterative process, so the residual effects of the Proposed Development set out in the ES will be those remaining after mitigation measures have been considered. Mitigation measures will be explained in the ES along with the conclusions about the effects of the Proposed Development incorporating appropriate mitigation measures.

3.0 Nature and Purpose of the Proposed Development

3.1 Purpose of the Proposed Development

3.1.1 The purposes of the Proposed Development are:

- To facilitate distributed generation of electricity including by private wire and possible local supply of heat
- Low carbon power and heat energy
- A secure recovery outlet for non-hazardous residual waste and refuse derived fuel (RDF)
- Energy security.

3.1.2 In fulfilling these purposes, it is intended that the Proposed Development would also deliver economic and environmental benefits to businesses in the vicinity of the site and wider area in terms of supplying energy that is low cost, low carbon and secure. This would have the advantage of making these businesses more robust and help to safeguard their contribution to the local economy and communities by way of jobs. It is expected that the Proposed Development would also attract new investment in new developments that will add further to the local economy.

3.1.3 By providing a secure outfall for Residual Waste the project would assist Lancashire to manage its waste and obtain value from it. The Proposed Development would be a centrally located waste management asset with excellent road access.

3.2 Distributed Generation

3.2.1 The Proposed Development will generate electricity and, potentially, also heat for direct supply locally to businesses and other heat users. It could also supply electricity to the "local" power grid (i.e. the Distributed Network Operator system, not the National Grid). It is a "Distributed Generation" proposal. The Red Scar Industrial Estate and its surroundings, and the area east of Preston generally, is home to a wide range of businesses that could be supplied with energy directly from the Proposed Development. There is also industrial development land that may be more attractive to prospective developers with a secure supply of low carbon and competitively priced power, that the Proposed Development would provide. As such the Proposed Development might assist in supporting existing businesses and employment as well as attracting new.

3.2.2 Distributed Generation has a number of advantages. By connecting the generation of electricity more closely to the point of its consumption it avoids power losses associated with transforming power to high voltage for long distance transmission then back to lower voltage for distribution and final consumption.

3.2.3 If electricity is supplied locally through private wires, bypassing the "local" grid, there will be even less power lost. It also means local businesses may purchase the power at a price

closer to the wholesale price, achieving a cost reduction to their business. If heat can be supplied this will reduce dependence on gas (mainly) for water and space heating and further reduce costs to energy consumers. When heat and power are supplied from the same plant, it is often referred to as a "Combined Heat and Power" (CHP) plant.

3.2.4 Power generators are often classified as "baseload", which means power is available at a steady rate through the daily, weekly and annual cycles. Baseload power is distinct from "intermittent" power sources. Power from the Proposed Development will be baseload and will not suffer from intermittency as do wind and solar power.

3.2.5 The Red Scar Industrial Estate ("RSIE") and other nearby industrial estates and employment areas are currently home to a very wide range of manufacturing, processing, storage and distribution businesses. Some of these have significant energy requirements for power and heat.

3.2.6 The project would use 7.3 ha of currently undeveloped land at the RSIE. Significant wider parts of the site would remain available for new developments. The owners of the RSIE are in discussion with two prospective developers and occupiers of new B2/B8 buildings that would require power and possibly heat to be supplied to them.

3.2.7 Further afield from RSIE but within "economic range" of a private wire or heat main are:

- Samlesbury Enterprise Zone where the masterplan indicates a significant increase in the amount of high-tech manufacturing, creating a significant demand for additional power and possibly heat in addition to that currently on the site;
- Other major manufacturing sites likely to consume significant quantities of power and possibly heat.
- A major waste water treatment plant which is likely to be a net consumer of power.

3.2.8 MTG's commercial model for the ERF envisages supply of a range of local business premises such as the above, existing and yet to be developed, with power and or heat. The basis on which MTG proposes to do this is supply at prices below those from conventional suppliers, hence MTG proposes a significant commercial benefit to the businesses and other enterprises that it supplies. This will in turn improve their competitiveness such that more work is won by them, hence potentially increasing GVA, employment and their spending in the local economy on goods and services.

3.3 Low Carbon

3.3.1 Typically, waste fuels used in Energy Recovery Facilities contain approximately 50% biomass energy content which means half of the carbon dioxide released post combustion is short cycle "atmospheric" carbon. This carbon is conventionally discounted from calculations on greenhouse gas effects. In landfill, which is the only realistic alternative for residual waste, biomass carbon mainly converts to methane, which has over twenty times the potency of carbon dioxide as a greenhouse gas. Although most landfill sites have gas capture and combustion systems using internal combustion engines that generate electricity, only around 50% of landfill gas is so captured and combusted with the remainder escaping to atmosphere. Hence the use of residual waste and RDF as a fuel for the Proposed Development is a significantly better outcome in greenhouse gas terms than is landfill.

3.3.2 Regarding the non-biomass energy content in residual waste, these by definition are fossil fuels. However, the carbon emissions from these elements of the fuel are mitigated by the short cycle carbon emitted from the biomass energy content and the carbon intensity of power generated is no greater than that of a gas fired power station, or less if the landfill diversion effects mentioned above are accounted for. Should higher efficiencies be achieved by significant use of private wire or by development of CHP, the carbon intensity of electricity produced by the Proposed Development would be even lower.

3.3.3 For at least the 25 years design life of the Proposed Development, gas fired power stations are likely to produce a significant quantity of baseload power in the UK and hence the provision of some baseload power from ERFs will reduce the demand for this and also, therefore, greenhouse effects and climate change.

3.3.4 Most enterprises engaged in activities which require the consumption of significant quantities of energy are concerned to reduce the carbon content of this energy and hence their contribution to global warming. Increasingly customers, investors, lenders and regulators expect efforts to be made to reduce the carbon intensity of production and products. In addition to measures to reduce energy consumption, through efficiencies, many enterprises have sought to generate their own low carbon power through solar and other means. Where this is not possible or where it generates only a small amount of power or only intermittent power, enterprises may either seek to purchase energy with a renewable origin via the grid, or seek direct supplies via private wires from nearby embedded baseload low carbon generators. The Proposed Development will be an embedded low carbon generator.

3.3.5 Access to low carbon energy generated by the Proposed Development will therefore be an advantage to local businesses and enterprises and will increase the competitive advantage of the local area.

3.4 Secure outlet for Residual Waste

3.4.1 Energy Recovery Facilities provide a secure and certain means of processing residual waste left after waste reduction and recycling. The efficiency of the Proposed Development would be such that it would surpass the acknowledged standard for such a plant to be considered “Recovery” rather than “Disposal” in managing residual waste. Recovery is between recycling and disposal in the waste hierarchy. Landfill is a form of disposal, hence re-directing residual waste from landfill to the Proposed Development would be beneficial.

3.4.2 The location of the Proposed Development centrally in Lancashire and to its urban areas, where most of the household and commercial waste is generated, means it is highly likely to contribute beneficially to the management of residual waste compared to other possible outlets which are further afield.

3.4.3 In recent years the UK has become dependent on the export of residual waste to nearby continental European countries. Whilst physically an export, economically this is the importation of a service because UK companies and Councils (and therefore householders) pay the continental plants for the service. The Pound/ Euro exchange rate adjustment following the Brexit Referendum added up to 20% to contracts priced in Euros, which are the majority. Although exchange rates may move back in favour of the Pound, such uncertainty is a risk which business and Councils have to price in to waste management contracts.

3.4.4 The amount of electricity that could be generated by the waste exported is less than the electricity the UK imports each year via Interconnectors, which are increasingly becoming a part of our baseload power system. Every megawatt (MW) of power generated from waste otherwise exported is therefore also a MW that may not need to be bought from generators based in foreign countries. Export of waste for energy recovery outside the UK is a wasted resource for the UK economy.

3.4.5 The Proposed Development will therefore provide a secure and certain means of recovering value from residual waste, utilising a resource at home rather than exporting it, and contributing to security of energy supply.

3.4.6 England remains heavily dependent on landfill for its residual waste notwithstanding the recent expansion of ERF capacity following the commissioning of several new plants recently and the use of export to continental Europe. Landfill is space extensive and, even accounting for the very high standards of environmental control required to protect land, air, and water from contamination, has environmental effects including visual, noise, and air pollution. It also has the carbon effects referred to above. Landfill is classified as a means of waste disposal whereas the Proposed Development would be classified as waste recovery. The Proposed Development would therefore support waste policy objectives of decreasing disposal and increasing the use of techniques such as Energy Recovery, which are above landfill in the "waste hierarchy".

3.4.7 Lancashire County Council is the Waste Disposal Authority for Lancashire. Working with the district councils which are Waste Collection Authorities it has achieved a level of around 45% recycling of household waste. To provide capacity to handle residual waste it entered a Private Finance Initiative contract with a company that unfortunately was unable to deliver the quantity and quality of household waste diversion from landfill intended. Consequently, the PFI contract has been cancelled and the facilities built taken into LCC's ownership and control. It is understood these facilities cannot be re-purposed to provide the level of landfill diversion of residual waste originally intended and hence Lancashire remains heavily reliant on landfill as its outlet for residual (non-recycled) household waste. The Proposed Development would be located centrally to the main population centres of Lancashire, where waste is mostly generated, and would enable the county to reduce its reliance on landfill and enable waste management to be elevated up the waste hierarchy in line with local and national policy.

3.4.8 Recent indications are of a return to growth in residual waste, reflective of a growing population and economic recovery post the Global Financial Crisis. Whereas recycling rates can possibly increase slightly there does not seem the money available to pay for significant increases in recycling. Moreover, it has recently become apparent that the quality of recycling in the UK and of material exported from it is not as good as would have been hoped for. Future recycling initiatives are as likely to focus on the quality of the outcome achieved as they are on the quantity of material collected and despatched for recycling. There seems therefore to be likely to be an increased demand for Energy Recovery to avoid an increase in landfill of Lancashire's waste.

3.5 Energy Security

3.5.1 The UK is increasingly reliant on imports of gas and electricity. As electrification of road and rail transport and domestic heating accelerates, driven largely by pressures to reduce air pollution in urban areas, so reliance on imported sources of energy will increase unless

the UK develops more domestic generation capacity. Coal is now almost completely phased out as a source of power and the UK's fleet of nuclear power stations is ageing and being de-commissioned. Costs are proving prohibitive to much of the new nuclear generation fleet with only around half of the new projects envisaged by the National Policy Statement on Nuclear Power currently coming forwards. In generating electricity and heat from residual waste the Proposed Development will help to reduce this dependency on imported power and gas and make the UK's energy supplies more secure.

3.5.2 In addition, local industrial and commercial consumers of power and heat generated by the Proposed Development will benefit from a secure supply which would not be affected by "brown outs" or "black outs" resulting from the failure of the strategic power generation and distribution infrastructure.

3.5.3 With the Proposed Development, Lancashire would also become more self-sufficient in energy sources, developing a more circular flow of materials in its economy. Local businesses would be powered by energy recovered from the residual waste of the local communities in which they are based.

3.6 Alternatives

3.6.1 The EIA Regulations require scheme promoters to set out those alternatives that have been considered and explain the reasons for the selection of the Proposed Development over alternatives.

3.6.2 It is considered that there are no alternative technological solutions that could achieve all of the purposes of the project set out in paragraph 3.1. Alternative distributed energy sources are available, and these might be low carbon and provide energy security but only fuelled generation (as distinct from intermittent generation e.g. solar or wind) could achieve the same level of service (i.e. baseload supply of power and/ or heat) unless significant storage capacity were included, and only residual waste fuel can achieve the energy purposes in addition to the residual waste recovery purpose. The area of land required for equivalent generation by solar or wind would also be much greater

3.6.3 No alternative means of securing outlets for recovery of residual waste could, on the basis of commercially proven technology, demonstrate the same level of certainty as the Proposed Development. Recycling and re-use of waste is not considered an alternative as the fuel used will be residual waste and hence by definition not capable of recycling or re-use. On the basis of its knowledge of the waste industry in England and the extent to which that industry, particularly in Lancashire, is reliant on landfill and export of residual waste the Proposed Development represents the most secure option as well as the best on a balance of regulatory, technical, and commercial certainty.

3.6.4 Alternative sites to supply energy to the intended customers of the Proposed Development are effectively limited to the site of the Proposed Development and its immediate surroundings, which is allocated in the development plan for this purpose. The main alternative designs for the Proposed Development will also be considered.

4.0 Nature of the Proposed Development

4.1.1 The Proposed Development will use conventional "moving grate" combustion technology of a type which is in use at many hundreds of ERF plants around the world including over 30 in the UK. Waste fuel will be delivered by goods vehicles, including both articulated bulkers and smaller HGVs and will be deposited in a bunker. The trucks will drive into a tipping hall within the ERF building. The building will also house the bunker, grates, boilers, turbine and exhaust gas clean up equipment. Grab cranes will be used to mix the waste fuel in the bunker in order to achieve greater consistency of fuel supply and will feed the fuel into feed chutes. There are likely to be two moving grates and hence two feed chutes. The feed chutes will regulate the supply of fuel to the grates. They also allow an air seal to be maintained such that oxygen levels can be adjusted to achieve full burn out of the waste.

4.1.2 The moving grates will be inclined such that waste fuel tumbles down them under gravity as it is agitated by movement of metal grate bars. At the bottom of the grate fuel will have been reduced to ash. The combustion process will release significant amounts of heat energy in the gases produced by combustion. These gases will be passed through a boiler (one above each grate) in which water will be converted to high pressure superheated steam. The steam will be used to drive either one or two steam turbines which will turn generators and produce electricity. Some steam may be extracted separately for supply as heat energy.

4.1.3 The boiler design will ensure temperature and residence times to prevent the formation of toxins. Exhaust gases exiting the boilers will pass through systems designed to capture dust, neutralise acids, and clean the exhaust. There may also be systems to reduce oxides of nitrogen in the exhaust gas. After scrubbing in bag filters, gases will be exhausted to one or two flue stacks.

4.1.4 Low pressure steam exiting the turbines may be subject to further heat recovery as part of a CHP system and will in any event be passed to air cooled condensers such that the steam is converted back to water. This water will then be re-used in the boilers. Such recycling of water is an important feature because boiler water needs to be very pure and mains water has to be purified before it can be used. It also avoids what would otherwise be a considerable consumption of water.

4.1.5 The buildings and structures required to facilitate the Proposed Development are likely to have maximum dimensions of approximately 40 metres in height for the highest part of the building above the boilers which, of necessity are to be located immediately above the inclined moving grates. The reception hall and bunker section of the building will be approximately 25 to 30 metres in height, allowing for access and manoeuvring of road-going vehicles and for sufficient height for the grab cranes to feed the furnace feed chutes. The part of the building containing the exhaust gas scrubbers and other activities such as ash handling and water purification will be probably around 30 metres in height. The turbines, generators and electrical switchgear will be relatively small in size and will be housed inside the lower parts of the building also.

4.1.6 There may be ramps up to the waste reception hall and down again such that vehicles unload residual waste into a deep bunker, the base of which may be excavated below natural ground level. Doors to the reception hall will be fast opening/ closing to enable containment of air. Furnace feed air will be extracted from the reception hall and hence there will be a continuous inward draught, containing odours. Odorous compounds will be destroyed by combustion.

4.1.7 The air-cooled condensers will be external to the building and mounted on steel frames with around eight metres clearance above ground level such that air can be drawn upwards through them. The condenser banks will resemble large car radiators and are likely to be in two banks inclined towards each other to create an inverted V shape. The structure will be clad. At the base of the condenser units will be large low speed fans which will direct air over the condenser tubes and achieve a heat transfer from the steam and condensate to the air. The condenser structures are likely to be up to 25 metres above ground level. They will be around 60 to 80 metres long and 15 metres wide in plan.

4.1.8 The main ERF building is likely to have a maximum length of 120 metres and width of approximately 60 metres. It will include a five or six storey office building within it the top floor of which is likely to contain the control room which will have internal windows overlooking the reception hall and bunker as well as other parts of the plant. Other floors of this building will contain offices, mess rooms, wash rooms, meeting/ teaching rooms and control systems.

4.1.9 There will be 1 or 2 flue stacks, up to approximately 100 metres in height and, if constructed separately, will have a diameter of up to 3 metres. Stacks will be constructed of painted metal and with a platform for monitoring equipment.

4.1.10 Externally, the Proposed Development will contain site roads, car parking, landscaping, and drainage systems. There will be silos for flue gas treatment powders and liquids. There is likely to be a requirement for skip and container storage of some materials including metals extracted from the bottom ash. There will be large tanks for storage of firefighting water.

4.1.11 All loads delivered to or removed from the Proposed Development will be either in enclosed vehicles or will be sheeted to avoid dust and litter.

4.1.12 The majority of vehicles accessing the Proposed Development will be waste carriers. They will be lorries of all sizes and will all pass over a weighbridge on entry and exit with the difference in the two weights representing the weight of residual waste they have delivered.

4.1.13 Also accessing the site will be bulker lorries to remove bottom ash which represents around 20% of the weight of the waste delivered but will be much denser hence likely to be removed in maximum loads of circa 20-25 tonnes.

4.1.14 Tanker lorries will deliver lime or other alkaline powder for flue gas treatment and remove spent powder which will also include fly ashes extracted in the bag filters. Other flue gas treatment materials delivered may include activated carbon, most likely in bagged form, and urea, probably in dehydrated form.

4.1.15 There may be back up diesel generators on the site and if so, there will be a diesel fuel store. There is also likely to be diesel fuel stored for site vehicles.

4.1.16 The ERF process itself will be “autothermic” - there will be no use of fuel other than waste itself during normal operations. External fuel, most likely gas, will be used only to maintain

high temperatures such as in start-up and shut down phases. In normal operation there will be thousands of hours (up to 7,900) between start up and shut down.

4.1.17 Metal is most likely to be extracted from the bottom ash and this will be removed by skip vehicles taking it to metal recycling facilities. Other skip vehicles will be used to remove material ("contraries") extracted from the bunker because it is unsuitable by virtue of size or composition for combustion.

4.1.18 Bottom ash removed from the site will be taken to an ash recovery facility off site where further removal of metals (including non-ferrous) will be undertaken and the ash will be graded such that it may be used for engineering purposes. Bottom ash will comprise true ash (the burned-out residue of combustible materials) as well as stones, grit, bricks, concrete, glass, and metal.

4.1.19 Flue gas treatment residue and fly ash removed from the site, in combination amounting to the equivalent of approximately 2-4% of the throughput of the plant i.e. 8,000-16,000 tonnes per annum, will be classified as a hazardous waste because it will be caustic. It will be taken to a specialist re-processing or disposal facility in vacuum tankers and, typically, it will be used in the neutralisation of acid wastes from elsewhere.

4.1.20 Surface water on the site will be managed. Roof water in particular will be kept separate as it will be clean, and it may be used, for example, for flushing lavatories and for wash down. Rainwater failing on roadways and hard standings will be treated as "dirty" or "brown water" because of the potential for contamination by road run-off. It will be stored separately. The ERF will use this "brown water" in an "ash bath" to receive ash exiting the grates and achieve rapid cooling and extinguish embers. The ash bath will be topped up from stored brown water. Periodically the ash bath will be de-silted with the silt fed back through the ERF.

4.1.21 The construction process may require some earthworks, for example ground excavation to make the base of the bunker. Depending on the antecedent ground conditions some or all of the main building and structures may require piling.

4.1.22 The ERF building will be designed by an architect and is likely to include careful use of form, materials, colour and lighting. It is acknowledged that some parts of the building will be visible from some areas around the RSIE. Numerous ERFs have been built in recent years in the UK and abroad and a very wide variety of architectural approaches have been used. The external appearance of the building will be a key feature of an iterative design process the Applicant will go through with LCC and other stakeholders during the pre-application period. Areas external to the buildings will be landscaped and include screening where appropriate.

4.1.23 The fuels to be used in the Proposed Development will all be non-hazardous residual waste from households ("municipal solid waste" – MSW) or commercial or industrial (C&I) sources. Where waste originates from households it will either be from areas that have source separated collection of recyclables or will have been through pre-treatment to remove recyclable materials. C&I waste will all have been pre-processed to remove recyclables such that the feedstock to the Proposed Development will be residual waste for which there is no alternative but to recover energy from it or to landfill it. Such waste streams that have been processed prior to use in ERFs are sometime termed Refuse Derived Fuel (RDF).

4.1.24 Combining all anticipated vehicle flows delivering waste fuel and consumables such as flue gas treatment media, and removing bottom ash, scrap metal, contraries and flue gas

treatment residues, and allowing for variations the maximum vehicle movements at the site during normal operations will be up to 88 per day each way (i.e. 176 movements), with these being spread typically over a daily 12 hour window Monday to Friday (6 hours on a Saturday, none on Sundays or public holidays).

4.1.25 The holding capacity of the waste fuel bunker will be equivalent to 5 days' throughput. Such capacity enables the Proposed Development to operate without deliveries through the Easter and Christmas holiday periods and during short periods of disruption that might be caused for example by snow or industrial action.

4.1.26 The Proposed Development will normally be subject to up two weeks' annual shutdown with a similar period of reduced throughput when, for example, one grate/ boiler/ turbine line closes at a time. Based on typical operational data from similar developments elsewhere, this includes for both planned maintenance and inspection and unplanned events.

4.1.27 The total employment created by the Proposed Development in operation is expected to be approximately 40 full time equivalents. Approximately a third of these will be shift workers with the remainder working normal working hours. The plant will employ a range of different skill levels including highly skilled and professional workers as well as some semi-skilled workers.

4.1.28 Aside from operational HGV traffic and employees arriving and leaving work the only other source of traffic will be visitors and maintenance.

4.1.29 The Proposed Development will generate electricity continuously, 24 hours a day, 7 days a week and will be staffed permanently with a minimum of three operators present throughout every night and on public holidays, including Christmas. This level of staffing will be achieved by three times eight-hour shift pattern with 4 shift crews to allow for training, holiday and sickness. A larger group of workers (another 35 or so) will undertake maintenance and cleaning work, and management, commercial and administrative roles, and will work a normal working day being 8am to 6pm on weekdays. Staff (up to 4 people at a time) operating the weighbridge and the reception hall will work a slightly extended period of hours compared to "normal" working hours.

4.1.30 Construction is expected to continue for 2.5 - 3 years during which up to 380 people would be employed.

4.1.31 Capital cost is estimated at £200m.

4.2 Location

4.2.1 The Proposed Development will be located in the southern part of the Red Scar Industrial Estate, Longridge Road, Preston PR2 5NE. The site to be assessed comprises approximately 7.3 ha of undeveloped brownfield land.

4.2.2 The Proposed Development site is part of an area for which outline planning permission was granted in 2006 (Preston City Council reference 06/2005/0200) for general industrial (B2) and storage/distribution (B8) uses. A reserved matters application was approved in August 2009 (06/2009/0263) for three B2 and B8 buildings and an internal access road (the "spine road."). This planning permission has been implemented both by the construction of the road, a drainage ditch, and fencing.

4.2.3 Immediately west of the RSIE and between about 300-350m west of the Proposed Development site the M6 motorway runs generally north-south, beyond which are residential areas of Preston. The closest residential properties are at Thornley Road, approximately 500m southwest of the closest part of the Proposed Development site boundary, and Yew Tree Avenue approximately 440m west southwest of the closest part of the site boundary.

4.2.4 The Preston Crematorium and remembrance garden is approximately 300m northeast of the site. An area of woodland separates these from the site. 170m east is the River Ribble which forms a broadly horseshoe alignment in this location. The northern and western banks comprise areas of woodland. The land drops steeply towards the river and the woodland forms part of the Red Scar and Tun Brook Woods SSSI.

4.2.5 South of the site there are several footpaths through the Pope Land Open Space Local Nature Reserve (LNR). The extant planning permission includes for the provision of habitat enhancement between the site and this LNR. An LNR (Fishwick Bottoms) covers the majority of the proposed site.

4.2.6 There are a number of footpaths proximate to the site. Footpath 3 runs along the woodland that bounds the River Ribble to the east of the site, and connects with footpath 4 which passes through the nature reserve to the south.

4.2.7 The wider area is dominated to the north by industrial estate uses, to the west by the urban area of Preston, and to the east and south primarily by open space, the river, farmland and some scattered settlements. In terms of other large scale industrial and commercial sites the large BAE Systems complex at Samlesbury Aerodrome (now designated as an enterprise zone) is approximately 4km east of the site, and the Samlesbury Brewery approximately 2.2km south.

4.2.8 RSIE is home to numerous small and medium sized enterprises including waste (including solvent waste) transfer stations and recycling, asphalt and concrete plants, fabrication, construction, paint spraying, and production of personal care products e.g. face creams. Off the industrial estate is a large board facility (Board 24, 600m to the north), the company headquarters and distribution warehouse of Booths, the regional supermarket, and a very large chilled distribution warehouse serving Spar shops.

4.2.9 RSIE is brownfield land being until the 1980s the site of a large Courtaulds synthetic fibres plant that occupied the site from its construction in the 1930s. RSIE has been developed incrementally to its current size on the site of this large former factory that had twin chimneys of approximately 105m in height (demolished 1984) which were well known local landmarks (“the biros”).

4.2.10 The currently un-redeveloped southern parts of the former factory site, including the area of the Proposed Development are allocated for employment development in the Preston Local Plan 2012-26 (Site Allocations and Development Management Development Plan Document), July 2015. The Joint Lancashire Minerals and Waste Site Allocation and Development Management Policies Development Plan Document, September 2013 also allocates the RSIE including the site of the Proposed Development for the development of strategic waste management facilities, including energy from waste.

4.3 Programme

4.3.1 It is anticipated a planning application would be submitted in Quarter 2 of 2019. Allowing 16 weeks for determination of this application, in accordance with the EIA Regulations, a planning permission might be granted in Quarter 3 or Quarter 4 of 2019. Typically projects similar to the Proposed Development require 30 to 36 months for construction and hence the Proposed Development might be expected to be operational in 2022. The typical design life of such plants is 25 years, meaning operations lasting until the late 2040s at the earliest although there are several recent examples of plants in the UK being renovated such that longer operational lives may be achieved or indeed, they may be considered permanent.

4.3.2 Should the Proposed Development be no longer needed at the end of its design life it will be dismantled and the site returned to a condition no worse than that which exists today.

4.4 Technical Capacity

4.4.1 The Proposed Development would generate up to 40MWe of power. This is likely to be generated at 132kV. The Proposed Development might also or alternatively supply up to 40 MW of heat as steam or hot water.

4.4.2 The carbon intensity of the power and heat supplied by the Proposed Development will be less than alternative energy supplied by fossil sources (e.g. by burning gas).

4.4.3 It would export c320GWh of power annually. This is approximately equivalent to the annual electricity consumption of 80,000 typical UK houses.

4.4.4 It could also export c320GWh of heat per year. This is equivalent to the gas consumption of around 21,000 typical UK households. Power output would be affected by supplying heat, but overall carbon performance would improve the higher the proportion of energy supplied as heat. UK households typically consume two to three times as much energy in the form of gas as they do in electricity.

4.4.5 It is expected the Proposed Development would process up to 395,000 tonnes per annum of non-hazardous residual waste from households or similar commercial and industrial waste and RDF.

4.4.6 The plan would be expected to operate at a steady state around 7,900 hours per year (c90% availability). Its steady state processing rate would therefore be c50 tonnes per hour.

5.0 Likely Significant Environmental Effects

5.1.1 The sections below deal mainly with the likely significant effects of the Proposed Development in operation. Construction effects are set out separately where relevant. There will be a Construction Environmental Management Plan which will provide detailed guidance derived from the ES and other sources for contractors and managers engaged in construction.

5.1.2 The "baseline" against which the environmental effects of the Proposed Development will be assessed is the Proposed Development site in its current state. Whereas the Proposed Development site forms part of a larger parcel of land on which planning permission has been granted for employment uses and this permission has been implemented and hence is enduring there are no other firm proposals for development on the site of the Proposed Development.

5.1.3 Cumulative and in combination effects will be considered for relevant development projects which either have planning permission or seem likely to achieve it, i.e. schemes that are in clear conformity with the Development Plan and for which a planning application has been submitted. For each of the subject issues in the Environmental Statement, the relevant specialist adviser will identify a zone of influence. These zones may differ depending on the subject being assessed. Relevant development projects will be selected for consideration of cumulative and in combination effects depending upon their characteristics in relation to the subject under assessment.

5.1.4 Assessment techniques and measures of the nature and significance of effects will follow best practice as established by the Institute of Environmental Management and Assessment (IEMA) as well as other relevant professional and technical bodies (e.g. Institute of Field Ecology) and statutory consultees and agencies (e.g. Environment Agency).

5.1.5 The preparation of the Environmental Statement will be managed by Savills (UK) Ltd which, as well as being the UK's largest planning consultancy is an IEMA Quality Mark qualified company. This status is audited annually by review of work undertaken by the company. The work will be undertaken by individuals holding appropriate personal qualifications and experience and will also benefit from long association of key team members with distributed energy and energy recovery projects.

5.1.6 The following sections conclude with all issues being considered principal matters for the EIA save for Cultural Heritage and the Water Environment that are considered secondary.

5.2 Visual

5.2.1 Separately to the ES a Landscape and Visual Impact Assessment (LVIA) will be undertaken in accordance with a methodology compliant with Landscape Institute Guidelines. The results of the LVIA will be reported in the ES.

5.2.2 As described above the Proposed Development will include a building of up to approximately 40m in height, 120m in length and 60m in width. There will be one or two stacks of up to approximately 100m high and these will be up to 3m in diameter. Externally there will be air cooled condensers contained in a structure of up to 25 metres in height, there will be various external silos and storage tanks.

5.2.3 The Proposed Development will include roadways and parking areas and possibly ramps up to 10m above ground level into and out of the reception hall into and out of which vehicles will be driven during the 12-hour delivery period which will include hours of darkness particularly during winter months.

5.2.4 There will be twin weighbridges with a kiosk for the operative. There will be landscape planting and bunding. The Proposed Development will be surrounded by secure fencing, probably palisade fencing up to 2m in height.

5.2.5 The detailed design and layout of the Proposed Development is to be determined. Some parts of it will be visible from some areas outside the RSIE and hence a design reflecting this will be developed. The design is likely to include consideration of illumination during the hours of darkness both as a design feature and for functional purposes. There is likely to be aeronautical safety lighting of the flue stack(s).

5.2.6 The location of the Proposed Development lies above the northern side of the Ribble Valley above the incised escarpment which marks the edge of the river's flood plain at Horse Shoe Bend. There is a height difference of around 30 to 35 metres between the flood plain to the south of the escarpment (in which the Brockholes Visitor Centre is located) and ground level at the site of the Proposed Development. The M6 motorway which is around 300-350m to the west of the site rises from the south east through a cutting dug into the escarpment. Historic photos illustrate the appearance of the former Courtaulds factory that used to occupy the RSIE. It had twin c105m brick chimneys that were demolished in 1984.

5.2.7 To the west, north and east the site neighbours an urban or urban fringe setting with industrial and other buildings including the crematorium and to the west, across the M6, residential areas. The land north of the Ribble Valley escarpment is mainly flat and in addition to buildings there are many mature trees.

5.2.8 There are no designated landscape areas in close proximity. The southern boundary of the site of the Proposed Development marks the northern edge of the Green Belt. The site is not in the Green Belt. Green Belt is a physical planning policy designed to maintain openness of land within it and is not a landscape designation.

5.2.9 Sensitive receptors are likely to include walkers, cyclists and other members of the public at publicly accessible locations on the footpath network to the south of the site including the Ribble Valley. Users of the road network including the M6 may also be sensitive receptors.

5.3 Traffic and Highways

5.3.1 The Proposed Development site has very good access directly from M6 Junction 31a and the B6242 Bluebell Way, as well as theB6243 Longridge Road. Bluebell Way and Longridge Road intersect at a roundabout adjacent to the Red Scar Industrial Estate. The main access to the Red Scar Industrial Estate is approximately 150 metres west of this roundabout, off Longridge Road. Access to the site of the Proposed Development is via private roads within

RSIE to an already constructed site spine road that runs across the site of the Proposed Development and also accesses further development land to its south west.

5.3.2 Assessments of the capacities of the main routes likely to be used during operation and construction will be undertaken with particular attention to pinch points, existing congestion (including time profile) and accident statistics.

5.3.3 Save for local deliveries of waste fuel it is envisaged all traffic delivering or collecting material to the Proposed Development would use the M6. Vehicle routing agreements would be established as appropriate with the Highway Authority and other relevant stakeholders and organisations delivering or removing material from the site including during construction would be contractually required to adhere to them.

5.3.4 The traffic generation characteristics of the Proposed Development are set out above under "Technical Capacity".

5.3.5 Whilst there would be a change to the existing pattern of traffic movement, deliveries to the Proposed Development would be of pre-existing flows of waste that currently go elsewhere, much of it to landfill (mainly at Accrington) and some of it via transfer and recovery facilities to other destinations including possibly overseas. The re-direction of this traffic to Red Scar may have the effect in other locations of reducing current traffic movements and of generally reducing the need to transport waste by providing a facility local to the Preston, Blackpool, Blackburn, and north and east Lancashire areas.

5.3.6 Sensitive receptors for the traffic are likely to be the local network between the site and the M6. A decision will be taken, based on assessments, whether northbound traffic from the Proposed Development and southbound traffic to it will be required to use Junction 31 (the “Tickled Trout”) junction and Junction 31a, which has southbound “on”/ northbound “off” slips only. Although some traffic will come from and go to the local road network via the B6242 (direction Fulwood) and B6243 (directions Ribbleton and Grimsargh) this will be associated with local waste which is on the highway network in any event. There is no residential property fronting onto any of the roads that would be used by vehicles delivering to or collecting from the Proposed Development between its site and M6 Junction 31a.

5.4 Traffic and Highways - Construction

5.4.1 During the construction period there will be fewer HGVs accessing the site but more smaller vehicles and cars. Construction personnel will be subject to a transport management plan such that when feasible they will be brought to site in buses or minibuses and /or encouraged to car share or use bus, cycle or foot transport to site.

5.4.2 There will be some large loads carrying construction materials and components and these will be managed carefully to minimise disruption. Because of the close proximity of the M6 Junction 31a and the lack of sensitive land uses fronting Bluebell Way and it is not anticipated there will be significant disruption to communities from oversized loads. There are no weak or complex bridges or junctions and no railway crossings affected.

5.5 Air Quality

5.5.1 The Proposed Development will be subject to regulation by the Environment Agency and an Environmental Permit (a separate and additional consent, different to Planning

Permission) will be required to allow its operation. The Environmental Permit will be subject to audit and the Proposed Development to inspection during its operation. The Permit may be modified or removed subject to the performance of the plant or changes in background legislation. Whilst ERFs (like many other industrial processes) have seen their permits modified, no ERF using conventional technology of the type proposed has ever had its Permit removed. The Proposed Development may therefore reasonably be expected to surpass all required standards for the control of pollution.

5.5.2 The Environmental Permit for the Proposed Development will establish the operational standards for air emissions from it based on the EU Industrial Emissions Directive,[1] with tighter standards potentially necessary to reflect any local circumstances. The IED standards are very strict for ERFs. For example, they establish requirements for release of oxides of nitrogen that are considerably tighter than the equivalent standards for diesel generators.

5.5.3 Possible air quality effects of the Proposed Development might be considered as follows:

- effects of the dispersion of the treated products of combustion which will be emitted from the stack of the Proposed Development
- fugitive emissions of dust and odour from the handling of waste and ash within the building
- exhaust emissions from road vehicles delivering and collecting to and from the Proposed Development.

5.5.4 Stack emissions will be treated using the inherent design of the boiler and flue system. The exhaust gas will be maintained for a period exceeding two seconds at a temperature in excess of 850° C in order to prevent the formation or reformation of dioxin and furan chemical compounds. Bag filter scrubbers using lime or bicarbonate of soda will be used to neutralise acid gases and to remove fine particles. Oxides of nitrogen will be controlled through design and management of the combustion process and, possibly, through the injection of urea. If urea injection is used care will be taken in design and operation to avoid "ammonia slip".

5.5.5 The exhaust characteristics including the height of the stack, the velocity, temperature, moisture content, and volume of the exhaust will be fed into a computer dispersion model (either ADMS or AERMOD, or both) to predict ground level concentrations of key emissions such as oxides of nitrogen, acid gases, and particulates. The dispersion models use terrain maps as well as models of the Proposed Development's buildings and structures, along with meteorological data to predict the behaviour of emissions from the stack. As with all locations within the UK it is relevant the prevailing wind is from the south west, which is relevant given the Proposed Development's site being generally north and east of sensitive land used. Localised effects of terrain (e.g. the escarpment separating the Proposed Development site and immediate surroundings from the Ribble Valley to its south and east) will be identified and accounted for in dispersion models.

5.5.6 Predicted ground level concentrations will be compared to existing levels (from the UK Air Pollution Information System (APIS) database, to standards and to information on the sensitivities of particular habitats.

[1] As with other EU environmental legislation it is anticipated the UK will maintain current regulations post March 2019 until such time as the UK government may decide to amend them.

5.5.7 Fugitive emissions will be controlled principally through building and plant design and through adherence to strict operational practices. For example, only covered or contained loads of waste fuel, ash, or FGT residue will be allowed to access or egress the plant. All loading and unloading of waste and ash will be internal to the plant. The reception hall doors will be maintained closed save when in use. Ventilation of the reception hall and bunker area will be into the furnace feed air for the combusters, so all air ventilated from the reception hall will be burned and the odorous components within it hence destroyed.

5.5.8 Exhausts from road vehicles accessing the site will be characterised and assessed using established techniques. Mobile plant used on the site will also be taken into account. Assumptions will be made about future road vehicle emission legislation and the likely take up of low or zero emission vehicles during the anticipated 25-year design life of the Proposed Development.

5.5.9 Sensitive receptors for air emissions include:

- Residential areas, the closest being on the western side of the M6 (approximately 400m to the west).
- Schools – there being three located within residential areas to the west of the M6 (the closest approximately 550 metres to the west)
- Nurseries including the day nursery on the junction of the B6242 and B6243 to the north of the site (approximately 500m north of the Proposed Development site)
- Employment areas at Red Scar and in the vicinity of the site, including adjacent the western and northern boundaries of the Proposed Development site).
- Locations at which food is grown e.g. allotments and farmland, particularly arable land.

5.5.10 A health impact assessment will also be undertaken based on an assessment of air quality effects.

5.5.11 Habitats and species within the Red Scar and Tun Brook Woods SSSI will also be considered potentially sensitive receptors. There are no European designated habitats within 10km of the Proposed Development and hence no Habitats Regulations Assessment will be required.

5.5.12 Air Quality Management Areas (AQMAs) do not exist in immediate proximity to the site. Dispersal modelling will examine any effects within AQMAs, but these are not expected.

5.5.13 An audit of existing activities (e.g. solvent recycling, board manufacture) in the vicinity of the site will be undertaken such that any scope for cumulative or in combination effects are identified.

5.5.14 It is known that planning consent has been given locally for a gas peaking plant and this will be included in consideration of air emission effects.

5.6 Air Quality - Construction

5.6.1 During construction the main potential air pollutants will be diesel fumes from road vehicles, mobile plant and generators, and dust. Diesel exhausts will be managed to the appropriate standards for the vehicles and plant items concerned. Dust will be managed by containment and by watering of open excavations and roadways. Roads within the RSIE used to access

the construction site will be swept to keep them free of mud in order to prevent such debris being deposited on the public highway.

5.7 Noise and Vibration

5.7.1 The site of the Proposed Development is affected currently by road noise from the M6. Other noise generating activities include existing waste transfer and recycling activities, asphalt and concrete plants, fabrication and other manufacturing activities as well as vehicle traffic on site and nearby public roads. Residential receptors are present to the west of the M6 at distance of approximately 400m minimum.

5.7.2 The majority of plant with potential to create noise will be housed inside the building. The building design will include measures to contain noise from the noisiest elements of the Proposed Development. Surplus spoil following construction may be used to create bunds for noise and visual screening.

5.7.3 Very high levels of acoustic insulation will be installed around the turbines and generator sets. Other potentially noisy equipment such as fans and motors will also be insulated.

5.7.4 Unloading and loading of vehicles will be within the building.

5.7.5 Vehicle access for delivery or collection of waste fuel and ash will be restricted to a twelve-hour working day.

5.7.6 The part of the Proposed Development with the greatest potential to create noise perceivable beyond the site boundary during normal operations will be the low speed fans on the air-cooled condensers. The site layout will reflect the need to reduce the effects of this noise both by the distance between the fans and noise receptors and by the location of the condensers relative to the other buildings and structures on the site.

5.8 Noise and Vibration - Construction

5.8.1 Potentially noisy activities during construction will come from mobile plant, vehicles, steel erection, loading and unloading of materials, and then from the commissioning stages of the ERF, particularly boiler commissioning.

5.8.2 All mobile plant and vehicles will be fitted with silencers and other noise abatement equipment and will be used and maintained in accordance with manufacturer's instructions. Vehicle reversing alarms will use "white noise".

5.8.3 Construction activities with the potential to generate noise nuisance will be restricted to normal working hours and will be permitted to exceed these only once activities may take place inside buildings.

5.8.4 During boiler commissioning it will be necessary to undertake blow down. The purpose of this is to remove swarf from the boiler that could damage the steam turbine once connected. In blow down the boiler is taken to full pressure with the steam then released at a test plate. Only once this has occurred with the test plate showing no damage, showing no swarf remains in the boiler, will the evolution be complete. Blowdown testing results in short periods of significant noise over one or two days. It is completely controllable and can be

managed to occur during the normal working day and following the issuing of advanced notice to local residents and stakeholders.

5.8.5 Pressure testing of the boilers which leads to safety valves lifting can also be a noisy activity that occurs for a short period of time during commissioning. Local residents will also be notified of this activity which will occur only during normal working hours. Thereafter the safety valves lifting during operation will be an unusual activity.

5.8.6 Sensitive receptors for noise and vibration will be people within:

- Residential areas, the closest being on the western side of the M6 (approximately 400m to the west).
- Schools – there being three located within residential areas to the west of the M6 (the closest approximately 550 metres to the west)
- Nurseries including the day nursery on the junction of the B6242 and B6243 to the north of the site (approximately 500m north of the Proposed Development site)
- Employment areas at Red Scar and in the vicinity of the site, including adjacent the western and northern boundaries of the Proposed Development site).
- The crematorium, remembrance gardens (330m to the east) and on Public Rights of Way in the vicinity of the site.

5.8.7 Pre-existing noise levels will be assessed by undertaking 24 hour noise surveys at representative locations of sensitive receptors that will be agreed in consultation with Preston CC Environmental Health Officers.

5.9 Ecology

5.9.1 The Proposed Development site is former industrial land that has been cleared and prepared for redevelopment. The Proposed Development site partially carries a Local Nature Reserve designation, but this has not prevented the grant of outline planning consent and it is understood this allocation is intended to facilitate development plan compliant developments. To comply, developments must assist delivery of woodland planting around the edges of the wider allocated employment sites south west of RSIE. None of the land for the Proposed Development is included within the anticipated woodland planting areas but it is likely the Proposed Development will contribute to further planting and habitat creation.

5.9.2 The site will be surveyed for the presence of protected species. There is a pond and wetland area west of the Proposed Development site which is surrounded by newt fencing, taken to have been installed for a former uncompleted development. There are other ponds to the south east of newt/ palisade fence that marks the southern edge of the site of the Proposed Development. Surveys will be undertaken in line with Natural England guidance by appropriately qualified and experienced ecologists whose advice, on, amongst other things, seasonality for surveys will be followed.

5.9.3 The nearest SSSI is the Red Scar and Tun Brook Woods SSSI. The nearest sites affected by European Habitats Directive designations or other international protections are 12 kilometres distant. This distance is suggestive of an unlikely sensitivity to effects from the Proposed Development, but this will be assessed in the air quality and ecology work.

5.9.4 The woodland to the south and east of the site is Ancient Woodland. At the closest point, to the east the Ancient Woodlands (which is also SSSI) is approximately 150m from the boundary of the Proposed Development site but in general it is more than 300m distant.

5.9.5 The potential for offsite effects, particularly on designated areas, by virtue particularly of air emissions, noise, and light will also be considered.

5.9.6 It is not believed any mature trees will be lost as result of the Proposed Development but the effects on TPO trees and any veteran tress will be assessed.

5.9.7 The LNR status of the site indicates that habitat and ecological mitigation as part of the development project may be required. The extent to which this is necessary, in the context of the Proposed Development site's current ecological status and the habitat creation work undertaken by the current land owner at the southern and eastern boundaries of the Proposed Development site will be considered as part of the development proposals.

5.9.8 Habitat types that might be vulnerable to air emissions from the ERF will be identified and effects on them assessed with reference to the air quality work.

5.10 Water Environment

5.10.1 The site of the Proposed Development is above a major bedrock aquifer within an area described as of low groundwater vulnerability. It is not in a Flood Risk Zone. A surface water drainage ditch has been constructed alongside the site spine road. There are ponds to the south east of the Proposed Development site. There is an area of wetland including a pond to the west of the Proposed Development site. This area of wetland appears to have developed on tipped material and is actually above the level of most of the site surface.

5.10.2 The activities with the greatest potential to contaminate ground and surface water will be undertaken beneath cover within the ERF building. Clean surface water from the roof of the building will be directed to surface water drains possibly via attenuation tanks. It is also possible that some of this water will be captured and stored for use in for example flushing lavatories or for washing down of plant of equipment.

5.10.3 Foul water from domestic services within the building will be drained to the sewer system as normal.

5.10.4 Rainfall falling on the roadways and hardstanding areas of the site will be treated as dirty water because it has the potential to be contaminated. This water will be collected to an industrial water lagoon or subsurface tank. It will be used in the ash bath as described in the technical description.

5.10.5 In effect the site will be wholly sealed from the water environment with the only flows being normal foul sewage and clean surface water.

5.10.6 The only other possible flow from the Proposed Development will be boiler water in the event it is necessary to drain down a boiler. This will be drained to the industrial water lagoon or the foul sewer system with the flow attenuated so as not to overload the latter.

5.10.7 The plant will draw some clean water from the mains water supply locally to fill and top up the boilers. This will be a relatively small amount. There will also be mains water used in normal domestic kitchens, lavatories, and mess rooms at the site.

5.10.8 There will be firewater storage tanks at the site. In the event of a fire, water used to fight fires will mainly end up in the dirty surface water system and will be directed to the industrial water lagoon and ash bath. Such water would most likely be removed from site either by tanker or by pumping into the foul water system following a fire.

5.10.9 Sensitive receptors will be the water of the River Ribble and other surface and ground waters. As described above the use of rainwater/ surface water may mean a reduction of flow to the Ribble and its local catchments but this will be of a very small quantum.

5.11 Water Environment – Construction

5.11.1 Pollution of the water environment is possible should contaminated material be disturbed during construction. This will be managed very carefully following proper surveys of the site pre-development (see section on Contaminated Land below).

5.11.2 Spills, e.g. of diesel fuel during construction, will be avoided by good site management and use of techniques such as fully bunded fuel storage tanks.

5.11.3 There will be a Construction Environmental Management Plan approved prior to construction commencing and approved by the WPA and the EA which will be binding on the developer and its contractors and which will set out work plans to avoid pollution.

5.12 Land contamination

5.12.1 The Proposed Development site was formerly part of a factory making artificial fibres. There is potential for some historical contamination. A small north-western part of the Proposed Development site is believed to contain historic landfill which extends beyond the Proposed Development site boundary. Historic records and previous studies will be examined. Intrusive ground investigations will be undertaken where considered necessary.

5.12.2 In general, the design and construction of the Proposed Development will have as close to a balance of spoil as possible – i.e. spoil created in construction (for example of the waste bunker) will be re-used on site for earthworks, screening and bunds or landscaping where appropriate. Excess spoil will be removed from site.

5.12.3 Contaminated ground identified at the site will be assessed in accordance with a source-pathway-receptor model to determine the potential risks posed by the Proposed Development to sensitive receptors. Depending on the outcomes of the assessment, contaminated land either will be contained, removed, or remediated on site prior to commencement of construction activities. The amount of spoil, clean or contaminated, removed from site will be minimised as far as practicable. Remediation strategies and treatment techniques will be agreed with the Environment Agency where necessary.

5.12.4 The building floors, hardstandings and roadways of the Proposed Development will be sealed using concrete and possibly geotextile membranes. The site will be maintained clean by frequent road sweeping and washdown. All potentially polluting substances (e.g. diesel, lime powder) will be held in containers designed to prevent and contain leaks. Loading and unloading operations will be undertaken within protocols designed to minimise leaks and spillages.

5.12.5 Should landfill gas be evident solutions may include gas membranes or venting foundation design.

5.13 Cultural Heritage

5.13.1 Although it is understood a building potentially dating to Tudor times stood near the site prior to construction of the Courtaulds factory, it is understood this was demolished in the 1930s. The Proposed Development site itself now contains no above-ground evidence of pre-industrial uses. As a result of an archaeological field investigation commissioned by the land owner in the mid-2009s, it is understood that the potential for archaeological remains is very low, having been destroyed by first the construction of the Courtaulds works and then its demolition and site clearance.

5.13.2 There are no listed buildings or other cultural heritage assets within the immediate proximity of the site. The closest listed building (grade II) is 1 km to the west across the M6.

5.14 Socio-economics

5.14.1 The employment and investment numbers associated with the project are set out above. These will be compared with the situation were the site to be developed for B2 employment.

5.14.2 An assessment will be undertaken of the benefits accruing from the types of employment to be provided and the likely trickledown effects to local businesses supplying goods and services to the Proposed Development during construction and operation.

5.14.3 The assessment will also consider the extent to which follow-on investment for example by land uses such as datacentres that require secure power and other energy intensive processes might occur. These are likely to bring additional employment, investment and trickledown advantages to the local economy.

5.15 Carbon and climate change

5.15.1 There are several reasons why it is considered likely the Proposed Development will deliver a carbon neutral outcome:

5.15.2 The waste fuel supplied if disposed of to landfill as is a very likely alternative, will create methane, which is over 20 times as potent a Greenhouse Gas as the carbon dioxide the Proposed Development will release. Although gas capture and combustion within power generating engines is very common at landfill sites, only around half of the carbon dioxide a landfill creates is predicted to be captured, the remainder leaking to the atmosphere.

5.15.3 Distributed generation by definition avoids the transformation of power to and from high voltage which increases resistance losses and hence increases carbon emissions.

5.15.4 Power produced will offset baseload power which is largely comprised of power from gas burning power stations.

5.15.5 It is likely there will be a reduction in long distance transportation of waste as a consequence of the Proposed Development.

5.16 Waste

5.16.1 The Proposed Development will utilise residual waste as a fuel and render it to principally inert ash that may be used as an engineering or construction aggregate. Some scrap metal will be recovered for recycling that would not otherwise have been.

5.16.2 Waste products from the process will be despatched to properly licensed facilities for the re-processing of the materials concerned.

6.0 Other information or representations

6.1.1 The Proposed Development is believed to be compliant with development plan policy in the Lancashire Minerals and Waste Development Plan which comprises the Joint Lancashire Minerals and Waste Development Framework Core Strategy Development Plan Document 2013 and the Joint Lancashire Minerals and Waste Development Framework Site Allocation and Development Management Development Plan Document September 2013. Policy MW2 allocates the whole of the Red Scar Industrial Estate including the Proposed Development site for a large scale-built waste management facility (which definition includes energy from waste) and also identifies a need for 500,000 tonnes of capacity in the Central Lancashire catchment area, which includes the Proposed Development site.

6.1.2 Policy DM4 requires all development that includes energy from waste to include measures to capture heat or electricity and either use it on site or export it to the national grid or a local energy or heat consumer.

6.1.3 The Proposed Development will meet the requirements of Policy DM4 as explained in paragraph 3.8 to 3.11 above. A variety of potential industrial and other outlets for energy recovered from waste exist in the immediate vicinity of the Proposed Development and within other areas capable of being linked to it. These include the InBev Brewery, occupants of the Samlesbury Enterprise Zone including BAe, United Utilities, Board 24, Spar, Booths and others.

6.1.4 Lancashire County Council is in the process of replacing the current suite of waste planning policy with a new Joint Lancashire Minerals and Waste Local Plan. The Development Scheme indicates adoption of this new plan in summer 2020 which will be after the anticipated determination of the planning application for the Proposed Development. Hence the application will be determined against the adopted local plan with the new document of increasing significance as a material consideration during its progress through consultation, amendment, and examination. The Proposed Development is believed to be compliant with the emerging plan, which adopts a criteria-based approach for new development such that the site allocated by the existing plan would be compliant.

6.1.5 MTG would as part of its work in preparing the ES liaise as required with relevant statutory and technical consultees as follows:

- Highways England
- LCC (Highways Authority, Waste Disposal Authority)
- PCC (Environmental Health and Planning)
- Environment Agency
- Natural England
- Lancashire, Manchester and North Merseyside Wildlife Trust (LMNMWT)
- United Utilities (Water Company)
- Electricity North West (Distributed Network Operator).

6.1.6 Consultation will also be undertaken with businesses located on and near RSIE and with organisations including Preston Crematorium and the Lancashire Manchester and North Merseyside Wildlife Trust's Brockholes Visitor Centre.

6.1.7 There will also be public consultation on the proposals during the period before and after submission of the planning application. Subject to the Proposed Development becoming operational, it is likely that a neighbourhood liaison group will be formed. Whilst much of the emphasis on EIA is on consultation with expert and statutory consultees, local communities have knowledge and insights which are often useful, particularly in devising mitigation to lessen the magnitude of environmental effects.

6.1.8 The Proposed Development will provide opportunities for education and training both generally in terms of work with schools and colleges on environmental and engineering themes and also specifically for example through apprenticeship schemes and professional development for employees.

6.1.9 The Proposed Development will be designed to be ready to accommodate heat recovery should this be technically and commercially possible. Preston City Council or social or private domestic and commercial landlords may develop a district heating project with waste heat from the ERF being the main source. This would follow widely deployed models in northern continental European cities and in several UK, cities including Sheffield, Nottingham, Coventry, parts of London, and Plymouth.

6.2 Significance

6.2.1 On the basis of the information set out in this document it is considered the following should be the principal matters examined in the ES:

- Visual effects
- Traffic and transport
- Air quality including human health
- Ecology
- Noise and vibration Land contamination
- Climate Change
- Socio Economics
- Waste

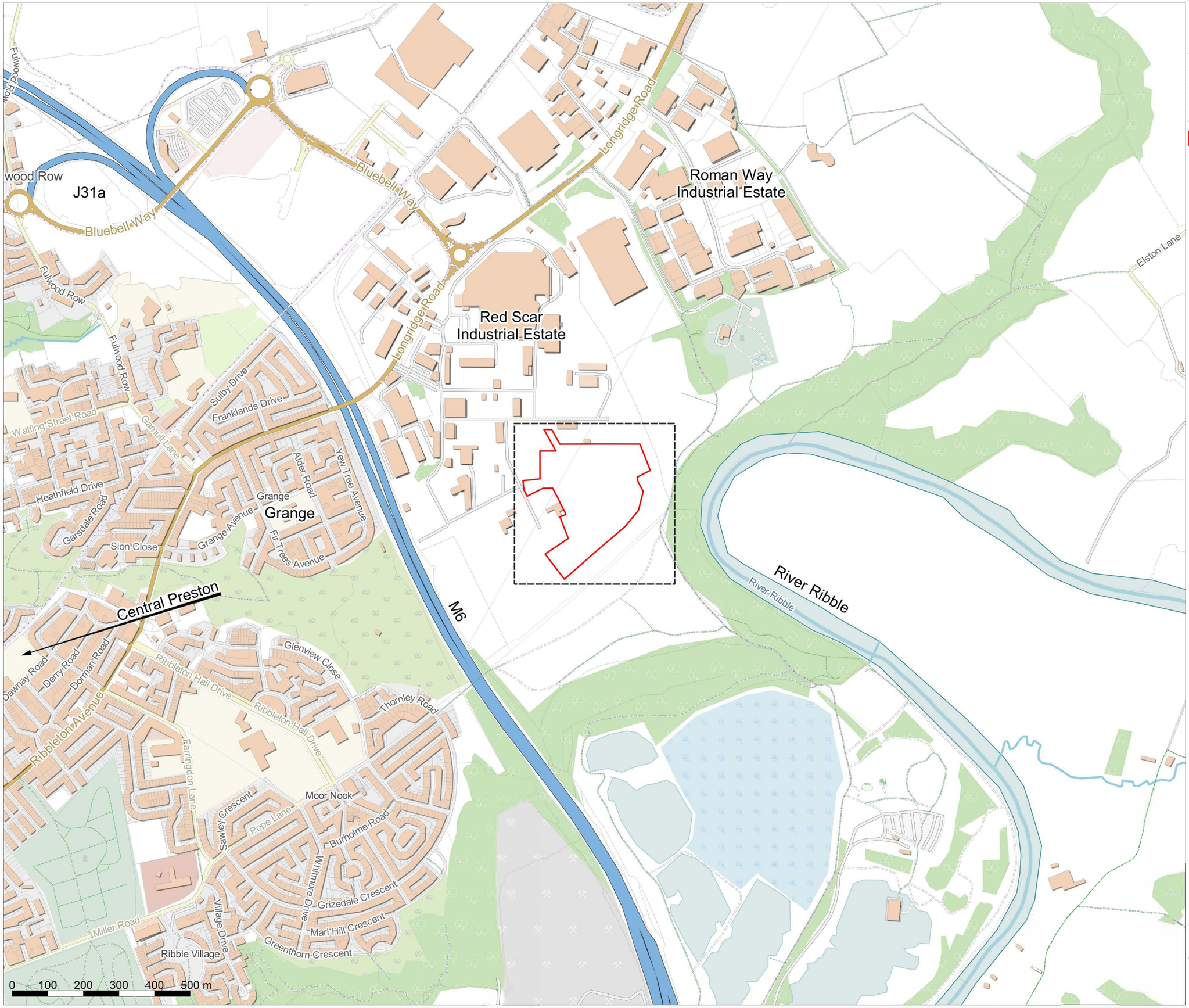
6.2.2 It is proposed the following should be considered secondary matters which whilst they remain of importance are not of themselves of sufficient significance to have made the project EIA Development:

- Cultural Heritage
- Water Environment

Figure 1.1
Site location plan

Ref:	WIPL-001
Date:	26-11-2018
Paper size:	A3
Scale:	1:10,000

Red line boundary



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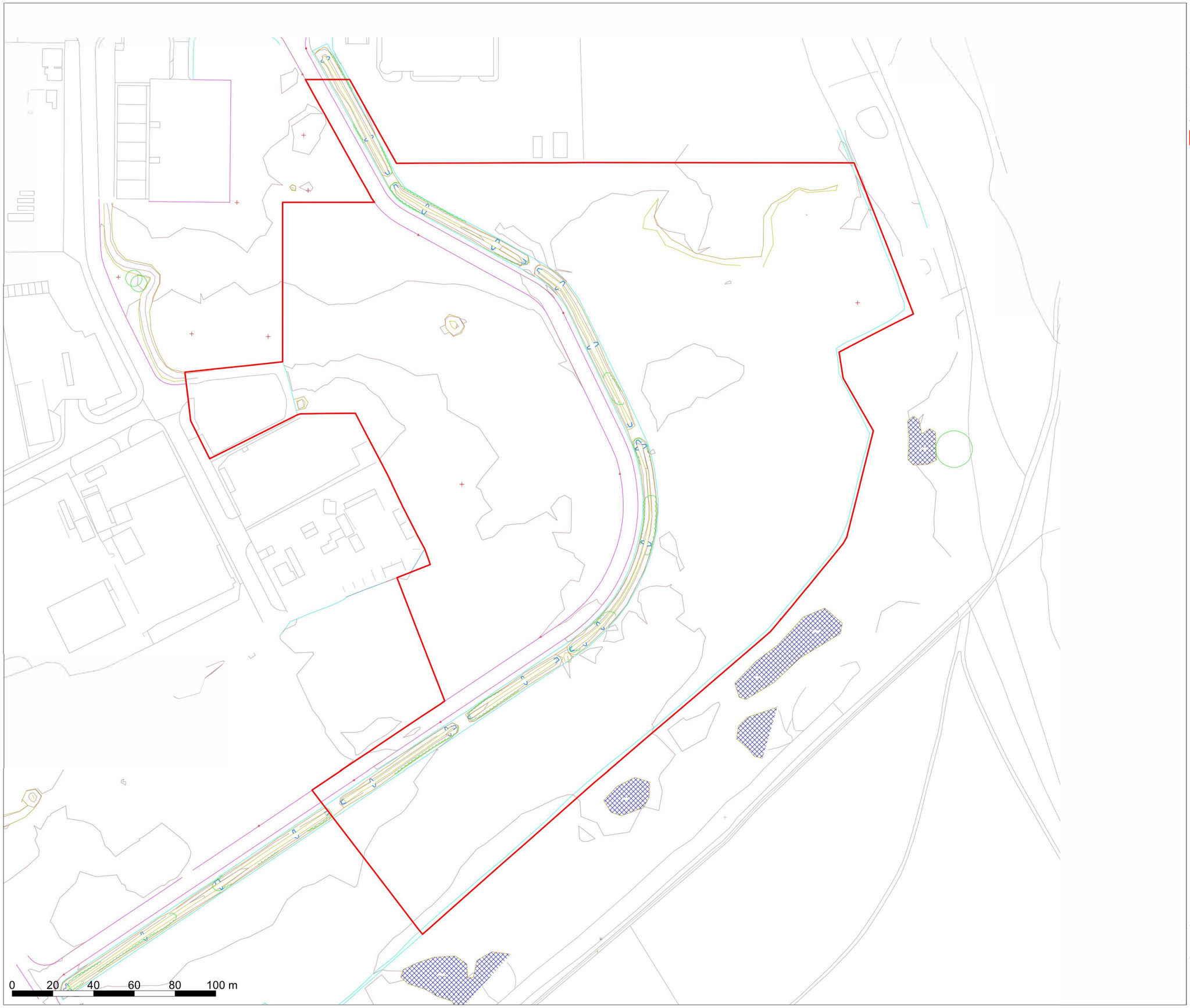

Figure 1.2
Site plan

Ref:	WIPL-001
Date:	23-11-2018
Paper size:	A3
Scale:	1:1,750

Red line boundary

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