6. NEED AND ALTERNATIVES

6.1 Introduction

6.1.1 Part 18 (3d) of the EIA regulations requires '*a description of the reasonable alternatives studied by the developer, which are relevant to the proposed development and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the development on the environment'* to be included within the ES.

6.1.2 Schedule 4 of the regulations provides further detail on what should be provided within the ES, and this includes '*A description of the reasonable alternatives (for example in terms of development design, technology, location, size and scale) studied by the developer, which are relevant to the proposed project and its specific characteristics, and an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects*.'

6.1.3 The National Planning Policy Guidance for Waste states that:

"*When determining waste planning applications, waste planning authorities should:*

only expect applicants to demonstrate the quantitative or market need for new or enhanced waste management facilities where proposals are not consistent with an up-to-date Local Plan. In such cases, waste planning authorities should consider the extent to which the capacity of existing operational facilities would satisfy any identified need".

6.1.4 However, Policy 60 of the County Durham Plan require that applicants demonstrate that they "*assist in meeting the identified need for new waste management capacity to manage specific waste streams over the plan period or can demonstrate an additional need which cannot be met by existing operational facilities within County Durham or the North West*".

6.2 Scope

6.2.1 The Scoping Opinion (Reference SCO/20/00006) provided by Durham County Council on the 25th September 2020 requires that the Environmental Statement include the consideration of alternatives and design evolution.

6.2.2 The Scoping Opinion also requires that the economic and social effects of the development including the need for the facility should be referred to.

6.2.3 This chapter seeks to address these requirements.

6.3 Consideration of 'Need' at a National Level

6.3.1 The waste sector has undergone significant changes in recent years, largely driven by EU waste laws and action plans including, but not limited to, the Waste Framework Directive (2008/98/EC), the Landfill Directive (1999/31/EC), the Hazardous Waste Directive (91/689/EEC) and the EU Action Plan for a Circular Economy (2015). These laws and action plans have changed the focus on how waste is produced, managed and disposed of, moving emphasis away from traditional waste management routes and causing a radical change towards a much more resource-based approach.

6.3.2 These requirements have been transposed into UK law (with the exception of the most recent Action Plan for a Circular Economy) through a variety of statutory instruments including the Waste (England and Wales) Regulations 2011, Producer Responsibility Obligations (Packaging Waste) Regulations 2007, End of Life Vehicles Regulations 2003 (as amended) and the Hazardous Waste (England and Wales) Regulations 2005. Implementation of these regulations has been led through several strategies including the Waste Strategy (2000), the Waste Strategy for England (2007) and the subsequent National Waste Management Plan for England (NWMP) 2013.

Waste Management Targets

6.3.3 These statutory instruments, legislation and strategies have resulted in numerous recycling and landfill diversion targets being set. The EU targets (transposed into UK statute) for waste management is as follows:

- 50% of household/C&I waste by 2020.

6.3.4 The EU have adopted an ambitious Circular Economy package, which includes revised legislative proposals on waste as follows:

- A common EU target for recycling 65%/70% of household/municipal waste by 2030.

Waste Management Strategy

6.3.5 The latest Government Strategy for waste management is 'The Our Waste, Our Resources: A Strategy for England (2018)' which recognises that the maximisation of the value of resources and the minimisation of waste are central to the achievement of sustainable living. The strategy supports five strategic principles as follows:

- To work towards all plastic packaging placed on the market being recyclable, reusable or compostable by 2025
- To work towards eliminating food waste to landfill by 2030
- To eliminate avoidable plastic waste over the lifetime of the 25 Year Environment Plan
- To double resource productivity by 2050 and
- To eliminate avoidable waste of all kinds by 2050.

6.3.6 The strategy confirms that the government will work with industry to secure a substantial increase in the number of energy from waste plants, recognising that existing facilities perform a valuable role within the waste hierarchy, reducing the amount of waste disposed of to landfill and recovering energy in a sustainable way.

Current Waste Management Statistic

6.3.7 The most up to date data on waste statistics was published on the 19th March 2020.

6.3.8 This concludes that the UK generated 41.1 million tonnes of Commercial and Industrial waste in 2016, of which 33.1 million tonnes was generated in England. The latest estimates for England indicate that C&I waste generation was around 36.1 million tonnes in 2017 and 37.2 million tonnes in 2018.

6.3.9 The Defra Digest of Waste Resources Statistics (May 2018) provides a '*compendium of statistics on a range of waste and resource areas'*. Tables 3.2 and 3.3 set out details for the treatment of residual waste, split by method in 2010 to 2014. Table 6.1 below shows that in 2014 23% of residual C&I was still being disposed of to landfill, this number only slightly reducing between 2010 to 2014.

Table 6.1: Waste at Final Treatment (Million tonnes)

	Energy Recovery	Incineration	Recycling and other recovery	Backfilling	Landfill	Land/water treatment	Total
2010	0.6	5.4	74.0	10.6	43.6	27.4	161.7
2012	1.2	6.0	76.5	12.0	41.3	26.9	164.0
2014	1.3	7.3	81.4	19.1	41.3	27.2	177.7
Change	4.7%	22.0%	6.5%	59.2%	-0.1%	1.1%	8.4%

6.3.10 Table 6.2 of the Defra Digest report sets out the exports of Refuse Derived Fuel from England and Wales between 2010 and 2017. This figure has increased significantly over this time to over 3.2 million tonnes by 2017 (the majority of the material being sent to Europe).

Waste Management Analysis

6.3.11 A report produced by Tolvik Consulting in June 2018 provides the latest analysis on UK Energy from Waste (EfW) statistics. This report identified that in 2017 a total of 10.89mt of residual waste was processed in UK EfWs. This represents 39.1% of the overall residual waste market.

6.3.12 The Tolvik report estimated that approximately 83.2% of all EfW inputs were derived from Residual Local Authority Collected Waste and the rest (16.8%) from Commercial and Industrial Waste.

6.3.13 On this basis, it can be assumed that 1.83 million tonnes of Commercial and Industrial residual waste was processed by EfW during 2017.

6.3.14 The data summarised in paragraph 6.3.10 states that approximately 36.1 million tonnes of C&I waste was generated in 2017. If we assume that a recycling rate of 50% was achieved, this leaves approximately 18.05 tonnes of residual C&I waste to be processed in 2017.

6.3.15 If 1.83 million tonnes of this waste was processed in the operational EfWs, it can be estimated that the current recovery rate for residual C&I waste is 19.8%.

Waste Forecasting

6.3.16 The UK Residual Waste: 2030 Market Review (Tolvik 2017) shows that 5.7 million tonnes of residual waste will continue to be landfill in 2030. This is based on the following assumptions:

- All EfWs operational or under construction will continue to be operational;
- An additional new EfW capacity of 2 million tonnes comes online;
- A further 2.1 million tonnes of capacity attributable to other waste management techniques;
- RDF exports continue at a level of 2.5 million tonnes per annum;
- 50% household waste recycling targets being met (giving an overall recycling rate of 57%).

6.3.17 This assessment demonstrates that the UK requires significantly more residual waste treatment capacity.

Conclusion

6.3.18 This assessment demonstrates that there is an overall capacity gap of 5.7 million tonnes of residual waste treatment capacity by 2030.

6.3.19 The above assessment (although subject to limitations) indicates that approximately 19.8% of residual C&I waste is treated by EfW. The majority of the remaining waste (80.2%) is likely to be disposed of to landfill, used as backfill or exported.

6.3.20 It is therefore concluded that a capacity gap to recover energy from residual waste still exists, in particular in the C&I market.

6.4 Consideration of 'Need' at a Regional Level

6.4.1 The 'model of waste arisings and waste management capacity for the north east of England waste planning authorities' published in July 2012 set the waste management capacity requirements for the region.

6.4.2 This report states that aggregating arisings estimates for all the WPAs in North East England gives an overall waste arising of some 3.6 million tonnes per year, consisting of 1.48 million tonnes from municipal sources (2011 estimates) and 2.15 million from commercial and industrial sources (2011 estimates). This is expected to remain fairly constant over the forecast period to 2030.

6.4.3 The report estimates that currently approximately 2 million tonnes of residual waste is generated in North East England, of which 1.34 million tonnes is landfilled and 0.6 million tonnes is used to generate energy.

6.4.4 The report highlights a dependency of landfill, commenting that all of the available energy recovery capacity is targeted at local authority collected waste (LACW), with a potential 0.3 million tonnes (by 2030) of commercial and industrial waste recovery capacity un-catered for.

6.4.5 The report assesses existing and forecast waste projects including the loss of Houghton Landfill and concludes that:

"modelling suggests that loss of capacity at Houghton is likely to have a significant impact on regional residual waste capacity, resulting in a landfill capacity shortfall by 2018 and overall capacity shortfall by 2021, unless increased recycling rates are delivered".

6.4.6 It should also be noted that if the recycling targets modelled are achieved, the shortfall will be extended to 2027, when a ca 111,000tpa shortfall is identified.

6.5 Consideration of 'Need' at a Local Level

6.5.1 The most recent waste arisings data for the County is provided within the Durham County Plan.

6.5.2 Table 11 of the Local Plan sets out the baseline arisings by waste type, confirming that in 2016 approximately 334.6kt of residual waste was produced per annum within the County.

6.5.3 Table 12 confirmed that the current available capacity for non hazardous residual waste disposal/treatment (excluding landfill) was 12.7ktpa.

6.5.4 Table 13 of the Local Plan sets out the future waste arisings and waste management capacity and is replicated below.

Table 6.2: Future Projected Growth in Arisings by Waste Stream

Waste Type	Quantity (tonnes x 1,000)		
	2016	2025	2035
Non-Hazardous waste - recyclate	246.9	265.2	267.1
Non-Hazardous waste - organic waste	62.7	66.0	62.7
Non-Hazardous waste - residual waste	334.6	326.3	333.9
Construction and Demolition (Inert)	623.3	623.3	623.3
Hazardous waste	43.8	43.7	43.0

6.5.5 Whilst table 14 of the Local Plan seeks to identify forecast capacity by site type to 2035 and is replicated below.

Table 6.3: Surplus Capacity (Including Any Capacity Gap) by Site Type (to 2035)

Facility Type	**Surplus Capacity (tonnes x 1,000 per annum unless otherwise stated)**
Mixed Materials Recovery Facility	118.8
Organic Recycling Capacity	162.2
Non-Hazardous Transfer	817.3
Anaerobic Digestion	122.6
Clinical Waste Transfer	28.6
Hazardous Waste Transfer	-11.2
Inert Waste Transfer	78.9
Non-Hazardous Residual Waste Treatment/Disposal	-67 to -145
Inert Landfill and Non-Hazardous Landfill	-3,682.8 (m3 x 1,000)
Vehicle Depollution Facility	136

6.5.6 The supporting text states that the table indicates that for most waste facility types there is no significant need to identify new waste management sites in the plan as there is already significant capacity existing. However, table 6.3 identifies a shortfall for non-hazardous residual waste treatment/disposal.

6.5.7 Paragraphs 5.586 of the emerging Local Plan provide additional background to this deficit stating that:

"In respect of the forecast Non-Hazardous residual waste treatment/disposal capacity gap it is understood that the identified capacity gap reflects the pattern of final management for LACW, whereby waste which cannot be composted or recycled is managed by incineration at the Suez Energy from Waste (EfW) plant at Haverton Hill in the Tees Valley. The council's contract with Suez runs until 2021 with options to extend to 2025. The council's evidence base has also identified that a significant quantity of Non-Hazardous residual waste treatment capacity is in

the planning pipeline across the North East and may come on stream in future years depending on the waste management industries ability to deliver the proposed schemes. Nonetheless, the council will consider positively planning applications to provide additional treatment capacity. It is recognised that such facilities could assist in managing waste towards the top of the waste hierarchy and could contribute both to net and regional self-sufficiency. Such proposals will be looked upon favourably where the proposal is acceptable in all other respects taking into account all relevant Plan policies".

6.5.8 The proposed development seeks to provide waste management for commercial and industrial wastes which is separate from the LACW stream and as such may not be accounted for within forthcoming contracts. The operator is already in discussions with potential suppliers and is confident that there is a market need for a scheme in this location.

6.5.9 The proposal will aid in the County's drive towards self-sufficiency, ensuring waste produced by local businesses in the region is managed within the County (rather than in the wider North East region) and will also provide local businesses with energy and heat in line with the principles of the Circular Economy.

6.5.10 Paragraph 5.587 recognises that a non-hazardous landfill cell at Aycliffe East Quarry will come in operation throughout the plan period which will significantly reduce the deficit in landfill capacity as identified in table 6.3 (table 14 within the Local Plan). The proposed development seeks to move the management of non-hazardous residual waste away from landfill (thereby prolonging any remaining capacity at existing sites) to recovery in accordance with the principles of the waste hierarchy.

Conclusion

6.5.11 The proposed development seeks to provide for local commercial and industrial waste management needs. The applicant is in discussions with local suppliers and this in itself demonstrates a market need for this waste management service.

6.5.12 The National Planning Policy for Waste recognises that local authorities should only expect applicant to demonstrate market or quantitative need where proposals do not accord with an up to date local plan. The planning statement submitted alongside this planning application has demonstrated that the proposal accords with the emerging Local Plan (which is progressed with sufficient detail as to be accorded significant weight).

6.5.13 Nevertheless, the analysis above demonstrates that there is a need for an energy facility and as such the proposal also accords with policy 60 of the County Durham Plan .

6.6 Need for Renewable Energy

6.6.1 In December 2015, the adoption of the 'Paris Agreement' was established through the twenty first session of the Conference of Parties (COP21), which outlined the intention of UNFCCC member states to refocus and meet the ambitions of climate change targets first introduced in the 'Kyoto Protocol' in 1992.

6.6.2 The Paris Agreement stresses the 'u*rgency of accelerating the implementation of the Convention and its Kyoto Protoco*l' and within this, ensuring that the long-term temperature goals are met.

6.6.3 The movement away from traditional fossil fuel energy and movement towards renewable low carbon energy is considered to be a major part of achieving this goal.

UK Energy Strategy

6.6.4 The UK Government has recognised the link between climate change and energy, setting stringent targets for the reduction in traditional energy generation (from fossil fuels) and increased in the use of renewable energy.

6.6.5 There have been numerous energy papers and targets set, including:

- The White Paper on Energy 'Meeting the energy challenge' (DTI) (May 2007)
- The Climate Change Act 2008 The UK Renewable Energy Strategy (July 2009)

6.6.6 In order to work towards the legally binding targets of the Climate Change Act 2008, Carbon budgets are set by Parliament on the advice of the independent Committee on Climate Change. So far, five carbon budgets have been set in law, covering the period from 2008 to 2032. The first three budgets (for 2008-23) were set in 2008 and the fourth (for 2023-27) in 2011. The fifth carbon budge was set in 2016. It limits UK greenhouse gas emissions from all sources, excluding international aviation and shipping, to 1,725 MtCO2 between 2028 and 2032. This is equivalent to a 57 per cent reduction in annual UK emissions over this period on average, relative to 1990.

6.6.7 The Committee on Climate Change has reported that the first and second carbon budget were met and the UK was on track to meet the third, but is not on track to meet the fourth or fifth budgets.

6.6.8 Most recently, the UK government has produced a number of progress documents as follows;

- Leading on Clean Growth – The Government's response to the Committee on Climate Changes 2019 Progress Report to Parliament – Reducing the UK emissions (October 2019);
- Net Zero The UKs contribution to stopping global warming (May 2019) and,
- Reducing UK Emissions 2019 Progress Report to Parliament (July 2019).

6.6.9 The Leading on Clean Growth Document has adopted a target of net-zero emissions of greenhouse gases in the UK by 2050 (i.e. at least a 100% reduction in emissions from 1990). Whilst the power industry is recognised as making great strides towards the use of renewable energy, the document states that:

"Our legally binding commitment to reach net zero greenhouse gas emissions in 2050 will require deep decarbonisation".

6.6.10 In the Net Zero report, the Climate Change Committee made clear that meeting this target is contingent on early and decisive action to strengthen policy.

6.6.11 In the 2019 Progress Report, states that "*overall actions to date have fallen short of what is needed for the previous targets and well short of those required for the net-zero target".*

National Planning Policy

6.6.12 The overarching National Policy Statement for Energy (EN-1) is specific to Nationally Significant Infrastructure Project applications, however it states that it is likely to be a material consideration in the decision making on planning applications that fall under the Town and Country Planning Act 1990 (paragraph 1.2.1).

6.6.13 Part 2 of the statement seeks to meet the legally binding targets to cut greenhouse gas emissions, transition to a low carbon economy, decarbonise the power section, reforms the electricity market, secure energy supplies and replace outdated energy infrastructure.

6.6.14 Part 3 outlines that considerations of need should be given considerable weight when determining planning applications for energy developments.

6.6.15 Paragraph 3.4.3 states that future large-scale renewable energy in the UK includes energy from waste, where;

"Energy from Waste (EfW) – the principal purpose of the combustion of waste, or similar processes (for example pyrolysis or gasification) is to reduce the amount of waste going to landfill in accordance with the Waste Hierarchy and to recover energy from that waste as electricity or heat. Only waste that cannot be re-used or recycled with less environmental impact and would otherwise go to landfill should be used for energy recovery. The energy produced from the biomass fraction of waste is renewable and is in some circumstances eligible for Renewables Obligation Certificates, although the arrangements vary from plant to plant".

6.6.16 The National Policy Statement on Renewable Energy Infrastructure (EN-3) was adopted in July 2011 and provides national policy in respect of renewable energy generation. Paragraph 1.1.1 of EN-3 underlines the importance of the generation of electricity from renewable sources by stating:

"Electricity generation from renewable sources of energy is an important element in the Government's transition to a low-carbon economy."

6.6.17 The revised NPPF published in June 2019 and its accompanying Planning Practice Guidance (PPG) set out the Government's planning policies for England and how these are expected to be applied.

6.6.18 Paragraph 151 of the NPPF seeks to ensure that there is an increased in the use and supply of renewable and low carbon energy and heat stating that plans should:

- provide a positive strategy for energy from these sources, that maximises the potential for suitable development, while ensuring that adverse impacts are addressed satisfactorily (including cumulative landscape and visual impacts);
- consider identifying suitable areas for renewable and low carbon energy sources, and supporting infrastructure, where this would help secure their development; and
- identify opportunities for development to draw its energy supply from decentralised, renewable or low carbon energy supply systems and for co-locating potential heat customers and suppliers.

6.6.19 Paragraph 154 recognises that applications for renewable and low carbon development should not require applicants to demonstrate the overall need for low carbon energy and recognise

that even small-scale projects provide a valuable contribution to cutting greenhouse gas emissions.

6.6.20 The National Planning Policy Guidance for Waste also recognises the importance of renewable energy generation. Paragraph 4 stating that:

"consider a broad range of locations including industrial sites, looking for opportunities to co-locate waste management facilities together and with complementary activities. Where a low carbon energy recovery facility is considered as an appropriate type of development, waste planning authorities should consider the suitable siting of such facilities to enable the utilisation of the heat produced as an energy source in close proximity to suitable potential heat customers".

Local Policy

6.6.21 At a local level, Durham County Council declared a Climate Change Emergency in 2019 and pledged to:

- Reduce carbon emissions from Durham County Councils operations by 80%;
- Investigate what further actions are necessary to made County Durham Carbon Neutral by 2050 and pledge to achieve this.

6.6.22 A Climate Change response plan was presented to Council on the 17th July 2019.

6.6.23 Climate Change is considered in more detail within Chapter 12 of this Environmental Statement.

Conclusions

6.6.24 The above policy analysis is clear in its association with the development of renewable and low carbon energy to reduce the UKs impact on climate change.

6.6.25 There is a long-standing debate as to how/if energy from waste material constitutes as a renewable and low carbon energy.

6.6.26 In 2013 (updated in 2014) DEFRA's published its on guide on energy from waste (Energy from Waste – A Guide to the debate). The document recognises that Energy from waste is not just being about waste management but also as an energy source, highlighting that:

- The energy it produces is a valuable domestic energy source contributing to energy security;

- As a partially renewable energy source it can also contribute to our renewable energy targets which are aimed at decarbonising energy generation.
- It has the added advantage that it is non-intermittent, so it can complement other renewable energy sources such as wind or solar.

6.6.27 This is reiterated in National Policy Statement for Energy (EN-1) as discussed above.

6.6.28 It is therefore clear that energy released from the combustion of residual waste materials can be considered to partially contribute towards renewable requirements.

6.6.29 It is also recognised that the provision of energy in this way will reduce the amount of energy required from non-renewable sources, contributing towards the low carbon economy.

6.7 Consideration of Alternative Sites

National Requirements

6.7.1 The National Planning Policy for Waste (2014) sets out the locational policies for waste sites. Paragraph 4 states that local authorities should:

- *"consider a broad range of locations including industrial sites, looking for opportunities to co-locate waste management facilities together and with complementary activities. Where a low carbon energy recovery facility is considered as an appropriate type of development, waste planning authorities should consider the suitable siting of such facilities to enable the utilisation of the heat produced as an energy source in close proximity to suitable potential heat customers;*
- *give priority to the re-use of previously developed land, sites identified for employment uses, and redundant agricultural and forestry buildings and their curtilages.*

6.7.2 The location of the proposed development accords with these locational requirements. This is demonstrated in more detail below.

Local Requirements

6.7.3 Paragraph 3 of the National Planning Policy for Waste (2014) requires local authorities to '*prepare Local Plans which identify sufficient opportunities to meet the identified needs of their area for the management of waste streams'*.

6.7.4 This process is undertaken through the allocation of waste sites within the development plan (which includes an extensive site search process finally agreed by the inspector at inquiry). Additional location policies are also provided which guide the correct location of such facilities.

6.7.5 The County Durham Local Plan, policy 61 states that proposals for new or enhanced waste management facilities will be permitted where they will assist the efficient collection, recycling and recovery of materials and they:

- *a are located outside and do not adversely impact upon the setting or integrity of internationally, nationally and locally designated sites and areas;*
- *b. are located outside the Green Belt or are in locations which do not impact upon its openness;*

- *c. minimise the effects of transporting waste including by locating as close to arisings as practical; and*
- *d. can be satisfactorily located as part of an existing waste management facility, or where the waste management facility can be satisfactorily co-located with complimentary activities and potential users of recovered materials, recyclates and soils, energy and heat, where appropriate and feasible and where this represents a sustainable option; or*
- *e. can be satisfactorily located on suitable land identified for employment use, or on suitable previously developed land in the larger towns and villages where the site can serve a local or larger catchment except where:*

  1. they are located on a strategic or specific use employment site. Such sites are generally not considered to be appropriate for new waste management facilities unless it can be demonstrated that the proposal will not cause unacceptable adverse impact on the strategic or specific use employment site's principal use;

  2. they are small scale waste management facilities that genuinely require a rural or outdoor location and that do not locationally conflict with the provisions of criterion (a) or (b) and other relevant policies in the Plan. In such circumstances proposals will be permitted where they can be satisfactorily located either:

  i. within either existing redundant rural agricultural or forestry buildings and their curtilages as part of farm diversification activities;

  ii. within small scale new build adjacent to existing farm buildings or extensions to existing farm buildings as part of farm diversification proposals; or

  iii. using existing areas of hardstanding for outdoor compositing operations.

  All proposals for farm based waste management facilities will be required to demonstrate that the management of waste is ancillary and appropriate in scale to the existing primary use of the site and that the waste to be managed arises either on site or within the local area.

  All proposals must demonstrate that there will be no unacceptable adverse impact on the environment, human health or the amenity of local communities"

6.7.6 These requirements can be summarised under the following headings:

- Proposals shall not be located within environmental/landscape designated areas.
- Proposals should minimise transportation of waste and protect the local highway network.
- Proposals should be located on existing waste management sites, with complementary activities and users of outputs.
- Proposals should be located on employment land, previously developed land but not on strategic or specific user employment sites.
- Proposals should not have an unacceptable impact on the environment or health.

6.7.7 The proposed development site can be regarded as fulfilling all three of these criteria as demonstrated below:

Proposals should not be located within environmental/landscape designated areas

6.7.8 The proposed development site is not located within an environmental, greenbelt or landscape designation.

Proposals should minimise the transportation of waste and protect the local highway network

6.7.9 The proposed development will generate a total of 22HGV movements and a maximum of 18 car movements. On average, there would be less than two HGV movements and no car movements (due to staggered shift patterns) during the peak hour period.

6.7.10 The industrial estate has been designed to ensure the free flow and appropriate access for the proposed development.

Proposals should be located on existing waste management sites, with complementary activities and users of outputs.

6.7.11 The proposed development is not located on an existing waste management site, however it is located adjacent to the users of the heat and electricity and therefore accords with this policy requirement.

6.7.12 The users of the industrial estate are similar in nature to the proposed use and their operations would not be adversely affected by such a use of the site.

Proposals should be located on employment land

6.7.13 The proposed development is located on land allocated for employment and is part of a wider masterplan which includes the proposed use.

Proposals should not have an unacceptable impact on the environment or health

6.7.14 This Environmental Statement and associated planning submission demonstrates that the proposed development will not have an unacceptable impact on the environment or health or local users or neighbouring uses.

Concluding comments

6.7.15 The proposed development conforms to the locational policies as set out within the adopted and emerging plans and as such it is considered that no alternative sites would be considered as preferable to that which is proposed.

6.8 Consideration Alternative Technologies: Best Available Techniques (BAT)

6.8.1 The proposed development utilises a number of different technology types. Each technology type and provider has been selected for specific reasons to ensure the efficient running of the plant.

6.8.2 The technologies are commercially demonstrated and highly efficient process which can process waste material to generate electricity.

6.8.3 A full BAT assessment will be provided as part of the permitting requirements.

6.9 Consideration of Alternative Scales

6.9.1 The size of the proposed plant, 60ktpa of material has been driven by economies of scale and need.

6.9.2 An Energy Facility which processes 60ktpa of material will generate approximately 3.48MW of electrical energy which is sufficient for local business production and the parasitic load to power the plant.

6.9.3 Project Genesis Limited is also in discussions with a number of developments with an aim to provide a local district heating scheme.

6.10 Consideration of Alternative Locations within the Industrial Estate

6.10.1 The initial plans for the development incorporated the key plant areas and machinery required and tied the project to a specific location on the site. The plant was positioned to the North East of the site, adjacent to existing units on Hownsgill Industrial Park. The development of the initial site included the addition of Weighbridge facility with necessary spacing to allow vehicular and pedestrian circulation, security point and gating. Additionally, a Red Line Boundary was established, clearly defining new site access, allowing required road widths for access from the public highway.

6.10.2 Upon first revision, the whole scheme was moved 100m South West, allowing additional space between the new site and the nearest residential receptors. This move also allowed for further development of industrial units between this proposal and the existing units at the entrance to the Industrial Park. Additionally, the area to the north of this new location is primarily a heavily wooded space assisting visual screening and including more landscaping to each side of the unit.

This also moved the facility further away from the potential visual impact of the proposed Derwent View site.

6.10.3 The boundary to the South West of the site was moved 10m from the facility in response to the swept path vehicle tracking analysis, allowing for adequate manoeuvring space within the site. Repositioning the weighbridge also provided more space in the yard, simplifying vehicle movements and ensuring space requirements are met. Turning circles and site entrance widths were all adapted accordingly, providing sufficient space for access.

6.10.4 Adaptations were later made to the orientation of the site, rotating the facility 90 degree anticlockwise. This allows the proposal to be situated further from the road, lessening the potential visual effect on the surrounding area. Further, the site access was moved to the North Boundary of the site, with the Security lodge and car parking repositioned accordingly. Further additions to the facility plan where the inclusion of a water tank and bicarbonate silo. These were positioned according to the operational purposes and access requirements.

6.11 Alternative Layout

6.11.1 Following the confirmation of the location of the proposed development, consideration to the materiality of the building was critical for softening the visual impact of the facility. A variety of material options were produced, taking into account the materiality of the local area and buildings of a similar function. Additionally, the colours of the building have been considered using a study of the local landscape, incorporating natural tones.

6.11.2 To further improve the visual amenity around the facility, landscape corridors and pedestrian/cycle connections have been added. This provides a potential access to the Coast to Coast cycle path whilst creating visual interest and an ecological buffer zone around the site.

6.11.3 Appendix 6.1 includes a number of design iterations.

6.12 Conclusions

6.12.1 In summary:

- This assessment has demonstrated that there is an identified national, regional and local need for residual C&I waste management;
- The proposed development produces up to 3.48MW of electrical energy, reducing England's reliance on fossil fuels and other non-renewable sources of energy;
- The proposed development processes waste produced by local businesses (that have already had the recyclable fraction removed) and extracts value in the form of electricity and heat which is supplied back to local businesses. This process is at the heart of the circular economy.
- The development is compliant with the locational policies of the County Durham Waste Plan and emerging Durham Plan, on a site allocated for employment and co-locating with its end users;
- The site is subject to a masterplan which includes an energy from waste site.
- The final layout has been derived from a detailed analysis of both operational and environmental needs.

6.12.2 It is therefore concluded that the proposed development fulfils an established need and that there are no more suitable locations, technologies or layouts from the proposed development.