



Newhurst Energy Recovery Facility

Frequently Asked Questions (*updated November 20, 2020*)

Energy-from Waste – General Questions:

1. What is Energy-from-Waste?

A: Energy-from-Waste (EfW) is a process that recovers the energy content in non-recyclable household and commercial waste with similar properties (collectively referred to as residual waste), by using it as a fuel in modern largely renewable electricity generating facilities.

The waste is delivered to combustion chambers where it is combusted at high temperatures and reduced to 10 percent of its original volume. The heat generated from the combustion chambers heats up water in steel tubes that form the walls of the combustion chambers. The water is converted into high pressure steam and delivered to a turbine that continuously generates electricity, which is then delivered to the local households and businesses via the UK's National Grid network.

After residual waste is treated, ferrous metals such as iron and steel, together with non-ferrous metals, such as copper and aluminium, are removed from the ash residue and sent to recycling facilities. In the UK, the ash residue can be used as an aggregate by the construction industry.

2. What kind of presence does EfW have globally?

A: EfW is a proven waste management solution used extensively worldwide. There are over 780 facilities around the globe safely converting more than 140 million tons of waste per year into electricity. Countries that extensively utilize EfW include Sweden, Germany, Denmark, Netherlands, Switzerland, France, United States, Singapore, Japan, and the UK. Many new facilities are being planned in Europe, Asia, and North America.

Waste industry experts Tolvik have said a total of 12.6 million tonnes of residual waste was processed across the UK's 53 operational plants in 2019. These plants produced 6,700GWh of electricity during the past year, which is around 2% of the total power generated in the UK (Source: [Tolvik](#)).

3. Are EfW facilities better for the environment than landfills? What role does EfW play in climate change?

A: EfW is a sustainable solution and plays a part in the circular economy by generating energy and recovering metals and aggregates for recycling; burying waste in a landfill is not sustainable. When waste is buried in landfills it decomposes and generates methane. Methane is a very potent greenhouse gas, over 30 times more potent than CO₂.

Indeed, the latest science from the Intergovernmental Panel on Climate Change (IPCC), states that methane is 84 times more potent than CO₂ over a 20-year span, hence landfill will have a much greater carbon/greenhouse gas impact.

Therefore, with the objective of addressing climate change, the European Union issued a directive to limit the landfilling of biodegradable municipal solid waste to 35% of the quantity landfilled in 1995. EfW is a net reducer of greenhouse gas emissions because it does not create the methane that landfill produces, in addition to offsetting the need to burn fossil fuels in power plants.

In addition, after residual waste is treated, metals are removed for onward recycling and residual bottom ash can be reused by the construction sector.

4. What about emissions from EfW facilities?

A: Modern EfW plants in England can only operate with an Environmental Permit from the Environment Agency (EA) under the Pollution Prevention and Control regulations. Other parts of the UK have their own respective agencies with similar powers.

Operators must continuously monitor in real time and report emissions from the plant. The EA inspect facilities regularly and tightly enforce regulations. Importantly, Public Health England reviewed the latest scientific evidence on the health effects of modern incinerators and concluded in its position paper (3rd September 2009), that any potential damage from modern, well run and regulated incinerators is likely to be so small that it would be undetectable.

The UK's Environmental Services Association (ESA) puts EfW emissions into context, stating *'in 2015 home wood burners generated 785 times more particulate matter, while road traffic emitted 45 times more NO_x, and Bonfire Night alone produced 10 times more dioxins than EfW across the whole year.'*

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5. Do EfW facilities increase particulate emissions?

A: As opposed to open burning and wildfires, EfW facilities use state-of-the-art emissions controls to capture and collect particulate matter. Operating like a very efficient vacuum cleaner, the filters in the baghouse remove 99.5 percent of the particulate matter from combustion gases.

[Public Health England](#) (PHE) has reviewed research undertaken to examine the suggested links between emissions from EfW facilities and effects on public health. PHE concluded that *'modern, well-managed incinerators make only a small contribution to local concentrations of air pollutants. It is possible that such small additions could have*



an impact on health but such effects, if they exist, are likely to be very small and not detectable.'

6. How many EfW facilities are there in the UK?

A: In December 2019 there were 53 EfWs facilities either operating or in late commissioning in the UK, according to waste industry experts, [Tolvik](#), in its latest annual report. The report states that a total of 12.6 million tonnes of residual waste was processed in 2019.

7. What are the benefits of Energy-from-Waste for waste treatment?

A: Energy-from-Waste (EfW) is an important part of an overall integrated waste management approach. The technology is recognized in the European Union waste management hierarchy as preferable to landfilling for those materials remaining after waste reduction, reuse, and recycling efforts have been exhausted. After recycling takes place, EfW facilities recover energy from remaining waste materials in an environmentally sound manner.

While doing so, EfW facilities reduce the need for fossil-based energy and reduce greenhouse gas emissions relative to landfilling.

8. What is the role of Energy from Waste in a circular economy?

A: The circular economy aims to keep products, components and materials at their highest utility and value at all times. In this way, “waste” does not have to be wasted, but rather may be used as an input for another process. Just like the waste hierarchy, waste reduction, reuse and recycling should be prioritized, but for remaining materials, energy recovery has a vital role to play in diverting residual waste away from landfill sites.

Nearly every step of a circular economy requires an energy input and recovering energy from residual waste can help meet this need. In addition to Energy Recovery, over 80% of the post-combustion ash arising can be used as a construction material, further contributing to recycling.

To underpin this, in 2020, [legal advice](#) given to the European waste industry concluded that energy from waste can be counted as a sustainable economic activity.

FEAD, the European federation of waste management and environmental services, sought advice from consultancy PwC, as it wished to clarify the technique’s status under the EU Sustainable Investment Regulation, which came into force on 12 July 2020.

The analysis concluded that a distinction must be made between incineration for disposal and incineration for energy recovery (known as ‘R1’ under the regulation’s classification system*), and that R1 status was consistent with the circular economy

while also fulfilling other environmental objectives, as long as it complied with the waste hierarchy.

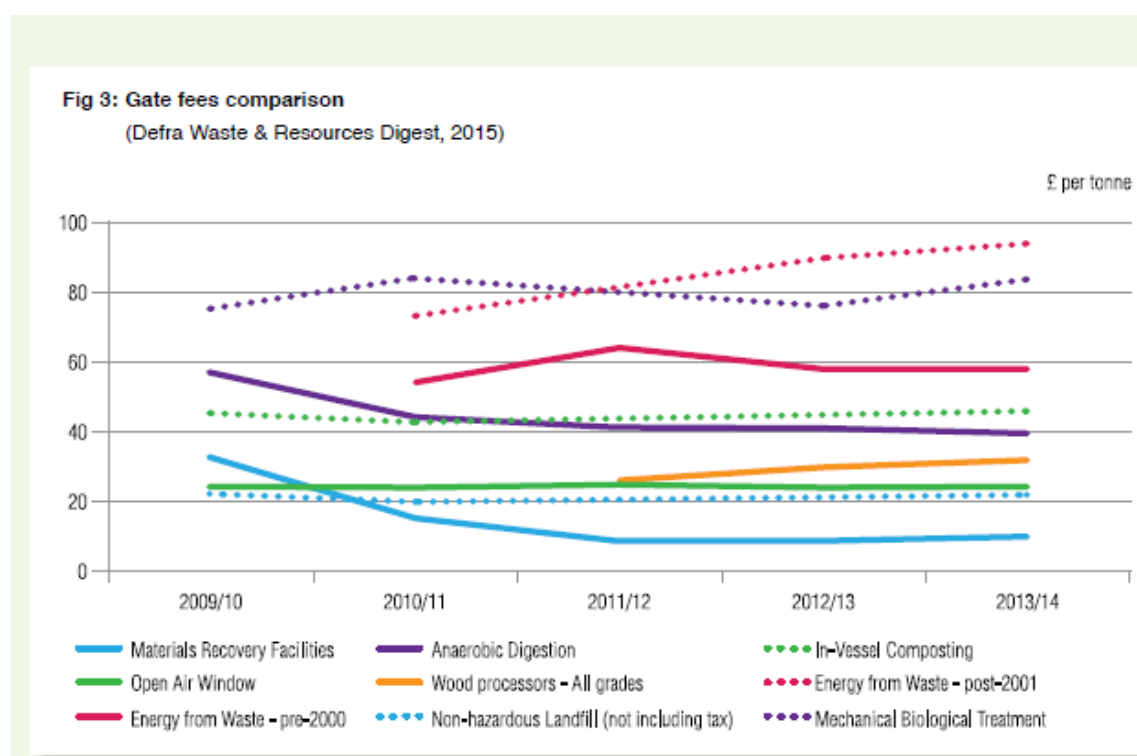
*Further information on the R1 classification is available in a further FAQ below.

9. Does Energy-from-Waste discourage recycling?

A: No, Energy from Waste (EfW) does not interfere with recycling. In fact, experience and underpinned by data collected in both the European Union (EU) and the US, have shown that EfW and recycling work very well together.

In the EU, EfW and recycling have grown together because of policies that minimize landfills. The European Environment Agency states: “*There is no evidence to support [the argument that] incineration of waste with energy recovery hinders the development of recycling.*” The EU countries with the highest recycling rates all use EfW extensively to process waste left over after recycling. It follows, that the highest recycling EU countries also have some of the lowest use of landfill for residual waste.

Where commercial and industrial waste is concerned, the responsibility for removing recyclates is on the producer (the public and local businesses). The costs of landfill or energy from waste are significantly higher than the costs of recycling, and so removing recyclable material from the waste stream in these circumstances provides commercial and environmental benefits.



Source: [Biffa](#)



10. Why is an Environmental Permit needed to operate an Energy from Waste facility and what does this contain?

A: An Environmental Permit regulates the way all UK EfW facilities operate and sets strict requirements in line with EU and UK legislation. The environmental permit for the Newhurst Energy Recovery Facility is available for review [here](#).

When the Environment Agency is fully satisfied that it can issue an environmental permit to an EfW facility and its operator, this document provides transparency for all. The Permit as it is very explicit about the types of waste an EfW facility can, and more importantly, what it cannot accept.

11. Can you provide an example of other requirements that are stipulated in an Environmental Permit?

A: Yes, there are many operational and safety procedures listed in an Environmental Permit. One example, which was raised in a meeting of the project's Local Liaison Committee, is the requirement for all EfW facilities to meet the minimum temperature requirement before introducing residual waste to be treated.

Environmental Permits state that all UK plants '*must reach 850 degrees centigrade for two seconds or more before waste can be introduced for treatment.*' This is not only an Environmental Permit requirement; it is also a regulation under the EU's Industrial Emissions Directive.

Under normal plant operating conditions, and to comply with the Environmental Permit requirements, an infra-red Pyrometer is installed in the furnace first pass area to provide a direct measurement of the 850°C / 2-second criteria. The auxiliary burners (also situated in the furnace area) are equipped with start-up devices, so that they will automatically go into operation to prevent the flue gas temperatures in the furnace falling below 850°C (the set-point is higher than this to act as a buffer).

12. There is growing interest in Carbon Capture and Storage (CCS) to be installed in all new energy from waste plants in the UK. What is the Biffa and Covanta's view of this?

A: Both Biffa and Covanta support initiatives that will decarbonise our economy and society as a whole - principally because climate change is widely recognised as the single biggest challenge facing the world today.

The Energy from Waste process is carbon saving, not creating, because it diverts residual waste away from landfill where waste degrades and rots. This then produces methane (CH₄) from landfill emissions. Indeed, the latest science from the

Intergovernmental Panel on Climate Change (IPCC) states that methane is 84 times more potent than CO₂ over 20-year span, hence landfill will have a much greater carbon/greenhouse gas impact.

Alongside waste reduction, re-use and recycling, we can all increase our efforts to minimise the amount of residual waste the UK produces, and which then requires treatment, landfilling or overseas export to European EfW facilities.

A number of heavy industries (including power generation and electricity intensive manufacturers) are, or planning to introduce, carbon capture and storage (CCS) technologies. Looking ahead, energy from waste facilities will play a critical role as the UK transitions to the electrification of cars and other forms of transport.

However, the reality is that no UK EfW plants employ CCS technology. Indeed, until very recently, there were not any CCS technologies on the market to install or retrofit to EfW facilities. That said, both Biffa and Covanta will be closely watching a CCS pilot project at an operation plant in the Netherland to assess its effectiveness.

Further information can be found [here](#).

COVID-19

13. Q: What Covid-19 safety plans are in place at the Newhurst site?

A: Hitachi Zosen Inova (HZI) is the Principal Contractor for the Newhurst Energy Recovery Facility. HZI, as well as all sub-contractors, are adhering to strict UK Government and Construction Leadership Council guidance on site.

All arrangements are in line with current guidance, this states that since the start of the pandemic, construction sites in England should remain open and operational. HZI's Covid-19 safety plans at the Newhurst site includes:

- All persons arriving at site are subject to temperature screening.
- Workforces start, finish and break times are staggered to avoid large groups.
- New Site Welfare and Offices have been designed to be large enough to enable social distancing.
- Additional handwashing facilities and sanitiser.
- Expanded the site cleaning team to ensure areas are cleaned and disinfected frequently.
- Masks are being worn when moving around offices.
- Site support staff working from home where possible. Unfortunately, this also requires that all non-construction related site visits are not possible until wider public health restrictions are lifted by the UK Government.
- Full-time medic on site with Covid-19 testing capability, should it be required.



Newhurst – Planning and Permitting Permission

14. What is the planning history for the energy recovery facility at the former Newhurst quarry?

A: Quarrying activities at Newhurst ceased in the early 2000's. Biffa acquired an interest in the site in 2007 and initially secured planning permission for an integrated waste management facility including landfill, composting and material recycling in 2009. The planning permission was implemented in 2012 through the construction of an internal access road although the approved development was never constructed.

Planning permission was granted on 28th June 2012 by the Secretary of State for the construction and operation of a 300,000 tonne per annum energy recovery facility. A further permission was issued on 26th March 2015 for some design changes to the proposed development and to increase the throughput to 350,000 tonnes per annum.

The 2015 planning permission included a number of pre-commencement conditions covering matters such as lighting, construction routeing, air quality monitoring and contamination management. All of the pre-commencement conditions were addressed and the submitted schemes approved by Leicestershire County Council by the required deadline of 28th June 2015. The planning permission was legally implemented by the construction of an on-site roundabout by 28th June 2015.

In June 2017 Biffa and Covanta entered a partnership to develop two Energy Recovery Facilities including the Newhurst plant. Following detailed design work a planning application was submitted to Leicestershire County Council in January 2020 seeking approval for further minor changes to the design including removing an area set aside for incinerator bottom ash thus reducing the development footprint and some further changes to the layout of internal access roads and ancillary equipment. Planning permission for the proposed changes was approved on 19th October 2020.

15. Does the Newhurst facility hold an Environmental Permit?

A: To ensure the energy recovery facility was able to operate after its construction phase, Biffa applied for the site's original Environmental Permit (for 300,000 tonnes annual processing capacity) and the Environment Agency issued the site's permit on 8th June 2011.

After planning permission was granted in 2015 for increased processing capacity, Biffa needed to ensure that this was also reflected in the facility's Environmental Permit. The Environment Agency granted an amended permit on the 17th May 2019 and today all necessary planning and permitting approvals are now in place.

Please note that further information on Environmental Permits can be viewed in the General Questions sections above.

Facility design, dimensions and waste treatment permission

16. How much waste will the Newhurst facility process?

A: When the construction phase is completed in 2023, the facility will provide a vital outlet for the sustainable treatment of up to 350,000 tonnes of residual waste per year and will generate up to 42 megawatts of low carbon energy – enough to power around 80,000 homes.

17. What are the dimensions of the plant?

A: The tallest feature of the facility is the plant's stack and planning permission has stipulated that this must be 96.5 metres in height. The highest point in the main building, which will house the boiler hall and flue gas treatment area, will be 47 metres tall.

18. What types of waste is the facility allowed to treat?

A: The facility is permitted to accept non- hazardous household, commercial and industrial wastes. The environmental permit details the types and quantities of waste that may be treated.

19. Will the Newhurst facility supply heat or steam to nearby properties, businesses and organisations?

A: EfW facilities are primarily designed to treat waste that cannot be sensibly or cost effectively recycled. However, one of the benefits of this process is the ability to generate electricity which can then be exported to the national grid to power homes and businesses.

There will be significant volumes of heat/steam which cannot be used to generate electricity. This will be available to 'heat off-take' customers should this be economically viable for both parties.

Integrating heat off-take into the Newhurst facility would further increase the plant's overall efficiency and put available waste materials to even better use. While Biffa and Covanta do not currently have a heat off-taker in place, enquires have already been received from potential heat off-takers for both district heating and commercial applications. Biffa and Covanta are keen and ready to engage with all interested parties who wish to discuss their requirements with us.

The planning permission for the facility requires the maintenance of a route to the boundary of the site, suitable for heat export if and when this becomes viable.



Waste for the Newhurst Energy Recovery Facility?

20. Where will the waste come from?

A: Biffa, as the fuel supplier for the facility will deliver non-hazardous municipal, commercial and non-hazardous industrial residual waste from surrounding areas to the plant and Covanta will operate the facility.

21. Will the Newhurst ERF create an over-supply of energy-from-waste capacity in the UK?

A: As recently as 2016, the UK landfilled 15.7 million tonnes of municipal waste. In addition, due to the closure of many landfill sites and insufficient EfW capacity, the UK exported approximately 3 million tonnes of residual waste to European countries for EfW treatment. Exporting of residual waste not only increases the carbon footprint of CO₂, it also diminishes the UK Government's goal for future energy security.

Even with a significant increase in recycling with robust recycling markets, there will continue to be residual waste that will need EfW treatment.

The UK has a significant shortfall in energy from waste treatment capacity and the Newhurst Energy Recovery Facility will provide much-needed treatment capacity for household and non-hazardous commercial and industrial waste. In the future this need is likely to escalate as the availability of the European export market decreases and cost of exporting waste overseas increases.

22. Will the Newhurst ERF treat medical and hazardous waste?

A: No, under the terms of the facility's Environmental Permit, the Newhurst ERF can only accept residual household, business and non-hazardous industrial waste from UK sources. Commercial and Industrial (C&I) waste arises from the business sector, such as factories, shops and offices and the composition of residual C&I waste is similar to household waste left over after recycling.

No hazardous or medical waste will be accepted or processed at the facility. Importantly, the types of waste that the Newhurst facility can accept are clearly set out in the Environmental Permit.

Construction and Operations

23. Q: How long is the construction phase for the Newhurst facility?

A: Full construction works on the Energy Recovery Facility began in June 2020 and is expected to take 36 months. Biffa, Covanta and Green Investment Group expect the facility to commence operations by the summer of 2023.

24. Q: What is the operational life of the facility?

A: Today, modern energy-from-waste plants such as the Newhurst ERF can operate for thirty (30) years or more. In the United States, Covanta operates over 40 energy-from-waste facilities, many have been efficiently and safely managing waste and generating clean energy for more than thirty years.

25. Q: Will the facility operate 24/7?

A: Yes, the Newhurst facility will operate 24/7. The planning permission restricts the hours during which waste may be delivered to the site to 0600-2200 Monday to Friday, and 0730-1600 on Saturday. The facility is not permitted to accept wastes on Sundays or Bank Holidays.

The wastes delivered during the permitted hours will be stored in the waste bunker to ensure there is sufficient fuel on site to ensure the plant can continue to treat wastes outside of the delivery hours.

26. Q: Will the facility be noisy?

A: During the planning process, noise was carefully considered and assessed using computer modelling of the proposed building and equipment. These companies used Government guidance on environmental noise, together with other standards, to establish suitable noise standards for the Newhurst ERF.

The computer model calculations have been compared with the standards and where targets would not be met, modifications to the layout and design of the facility have been made. The resulting noise mitigation has included the specification of high-performance acoustic framed openings with movable slats and quiet condenser fans.

Initial calculations of construction noise indicate that this will be well below recommended criteria. The preliminary assessment for operational noise indicates that the predicted noise from the facility will be generally below the target. The initial assessment of changes in traffic noise on the wider road network shows only small noise increases on all the link roads.

The planning permission and the permit for the facility both include conditions that set daytime and nighttime noise levels. These are measured at sensitive off-site receptors that may not be exceeded.



27. Q: Will the facility smell and attract vermin?

A: No. Waste delivered to the facility will be tipped into the waste bunker from the tipping hall which is inside the facility. No wastes will be tipped or stored outside of the facility.

The building will operate under a negative air pressure which prevents air and odours from escaping. The facility will be subject to strict monitoring by the Environment Agency.

28. Q: What happens to the ash it produces?

A: After combustion, the volume of waste is reduced by 90%, leaving an inert ash and metals for onward recycling. Residues from the treatment process such as fly ash and spent lime will be transferred to an off-site processing plant.

The remaining bottom ash will be reused in the construction sector as an aggregate material and metals will be sent to an off-site location, where they will be recovered and sorted for recycling. Fly ash collected in the air pollution control equipment will be stored in silos and removed from site in sealed containers by a licensed contractor.

29. Q: Will there be any recycling from the back end of the facility?

A: Yes. The metals will be removed from the residual bottom ash for recycling. After combustion has taken place at the facility, we are able to recover metals from the remaining ash for recycling.

In total, Covanta's facilities recycle approximately 500,000 tonnes (600,000 US tons) of both ferrous and non-ferrous metals. This is enough steel to build more than 400,000 cars and the equivalent amount of aluminium to manufacture more than three billion beverage cans. Recycling metal from EfW facilities avoids a tremendous amount of greenhouse gases and recovers valuable natural resources that would have otherwise been lost in landfills.

30. Q: What measures will you take to mitigate mud from site vehicles getting on to local roads during the construction phase?

A: Site and road safety are always top priorities and at all times. At the main site entrance and exit point to the Newhurst site, there is a dedicated wheel wash that all vehicles can use if the weather conditions are poor. In addition, the project's EPC contractor, Hitachi Zosen Inova, and all site workers will be encouraged to keep an eye on local road conditions and report any sightings of mud on local roads that come from the Newhurst construction site.

We also have a similar proactive approach when members of the public report mud on local roads and we would encourage anyone to get in contact with the project team at the earliest opportunity.

Employment and Supply Chain Opportunities

31. Q: How many people will the Newhurst Energy Recovery Facility employ?

A: The project will create more than 300 jobs during construction, with over 40 new permanent roles within the plant once commercial operations begin.

During the peak construction period, the project will employ over 300 construction operatives.

32. Q: How can I supply goods and services to the Newhurst project?

A: Covanta and its principal contractor, Hitachi Zosen Inova (HZI) want to source locally wherever possible. The Newhurst facility will provide supply chain opportunities for local businesses to bid for contract work on the project.

If you would like to find out more about supply chain opportunities with HZI, please register on their [website](#), or email the procurement team at info@hz-inova.com.

33. Q: When will the project start recruiting for construction and operational roles?

A: There will be two recruitment phases. Firstly, the largest number of roles will be required across the three-year construction phase and, secondly, the search and selection for the plant's future operations team.

For construction opportunities, the ERF's principal Engineering, Procurement and Construction contractor, Hitachi Zosen Inova (HZI) will appoint subcontractors and they will recruit the construction workforce at various stages of the build phase. This will create more than 300 jobs at the peak of the construction period. Importantly, HZI and all subcontractors will recruit locally wherever possible.

The next recruitment phase will be for over 40 new full-time operational roles and apprenticeships at the Newhurst facility. The plant will need individuals to fill positions as diverse as Engineers, Shift Supervisors, Mechanics, and even administrative staff. These jobs will be advertised well in advance of the commissioning of the ERF, starting in 2022. The positions will be promoted as widely as possible using local media, at Job Centre Plus, via local authorities and the project's dedicated website.

Local Liaison Committee

34. Q: How can I become involved in the Newhurst Local Liaison Committee?

A: Originally established in 2008, the Newhurst Local Liaison Committee (LLC) plays a key role in the communications arrangements of the project, which were put in place to ensure effective dialogue between Biffa and local communities.

Today, both Biffa and Covanta value the views and opinions of the LLC and near neighbours, we look forward to continuing to build open and transparent relationships. If you would like to find out more or be involved in the LLC, please email us [here](#).



Alternatively, if you would like to find out more about the Newhurst LLC, you can find the meeting agendas, minutes and presentations under [Community Engagement](#) on the project's website

Traffic and Transport

35. Q: What will be the impact of traffic?

A: Transport and access to the site and the impact of deliveries and people employed at the ERF was the subject of a full Transport Study as part of the planning application. The study concluded that there would be no unacceptable impact on the local highway network as a result of the proposed development. No objections were received to the proposals from either the Highways Authority or the Highways Agency.

As part of the construction a new, 'signalised' junction is being developed at the entrance to the site which will ensure the smooth flow of traffic on the A512 and which will allow vehicles to enter and exit the site safely.

The planning permission includes restrictions on the hours during which waste may be delivered to the site and a legal agreement that accompanies the planning permission specifies roads and areas where waste delivery vehicles may not enter when visiting the site.

The site benefits from being adjacent to junction 23 of the M1 motorway. The transport study concluded that 92% of waste deliveries would be from the M1 with only 8% of deliveries using the A512 to the west.