GREATER**LONDON**AUTHORITY

GLA/4509/WR

20 May 2019

Riverside Energy Park, Belvedere

In the London Borough of Bexley

Planning Inspectorate reference: EN010093

National Infrastructure Project Development Consent Order application - Written representation

Development Consent Order, Section 90 of Planning Act 2008

Proposed development

Cory Environmental Holdings propose to develop 'an integrated multi-technology Riverside energy generation park (REP) including an Energy Recovery Facility (ERF incinerator), Anaerobic Digestion Facility, Solar Panels, Battery Storage and electrical connection route'.

As the Riverside Energy Park would have an electricity generating capacity over 50MWe, it is classified as a Nationally Significant Infrastructure Project under section 14(1)(a) and section 15(2) of the Planning Act 2008.

Strategic impacts and summary

- **Heat demand:** there is insufficient heat demand in the local area for the proposed ERF to operate as an effective CHP plant. The applicant overstates the CHP opportunities. The applicant's existing energy from waste plant, adjacent to the proposed site, could meet all identified local need with only 70% of its heat supply capacity.
- **Renewable Energy:** Feedstock is expected to be less than 50% renewable.
- **Carbon:** Inadequate evidence provided to demonstrate that the ERF will meet the Carbon Intensity Floor Mayoral policy. The proposed ERF operating in power-only mode would be a net carbon producer, and not a carbon reducer.
- **Waste:** Modelling indicates that if the Mayor achieves his recycling and reduction targets, London will have surplus energy from waste capacity by 2030, when considering all existing and permitted incinerators. Permitting further EfW capacity will undermine achievement of the Mayor's recycling and reduction targets.
- **Waste transfer impacts:** The applicant does not detail the source of waste or the quantum of waste that would be treated in the ERF and makes no commitment to 100% river transportation. It is a major flaw of the EIA that insufficient assessment has been made of the environmental effects of the transfer of the waste.
- **Air quality:** The proposed ERF will emit over 4 times as much nitrogen oxides as currently emitted from the existing RRRF and Crossness Sewage Sludge Incinerator combined. Arsenic emissions will double. The proposals are not consistent with the NPS, fail to consider adjacent Opportunity Areas and do not sufficiently assess the impact of NOx on the nearby Sites of Special Scientific Interest (SSSI) or AQMAs.

In **summary**, it is considered that the adverse impacts of the proposed development would outweigh its benefits. Therefore, it is considered that there is no need for the SoS to determine the application in accordance with the relevant NPS, as set out in clause 7 of Section 104 of the Planning Act.

1. Context

1.1. The context for the GLA's Written Representations are set out in its Local Impact Report (LIR), which informs the Examining Authority (ExA) of the strategic impacts and policies affected by Cory's proposed Riverside Energy Park (REP). The Written Representations further develop the GLA's Relevant Representations submitted 12 February 2019 and also TfL's Relevant Representations submitted on the same date. The Written Representations use the evidence base and local policies set out in the LIR to set out the GLA's objections to the REP as well as drawing on relevant national policy and other matters.

1.2. This document sets out the GLA objections to the proposed REP, on behalf of the Mayor, and aims not to duplicate the LIR. Where appropriate, this document refers to statements set out within the LIR that set the context for the GLA's objections with regard to relevant policy and strategies. Acknowledging the need to cross-refer between these documents and to ensure ease for the ExA, GLA officers have referenced points within the LIR which are then discussed in further detail in these Written Representations (WR 1 to WR7).

1.3. The Mayor is also responsible for strategic transport matters in London. Transport for London (TfL) is the Mayor's strategic transport body and is concerned with effects on the strategic road network (SRN). TfL submitted Relevant Representations to the Inspectorate on 12 February 2019. TfL and the GLA are fully aligned and TfL officers have been involved in the production of this document.

2. Issues of strategic importance

2.1. The GLA opposes the proposed REP on the grounds that the Energy Recovery Facility (ERF), which is the principal energy generation element of the project, is not in accordance with local or national policy, including the relevant National Policy Statements (NPS), and that the adverse impacts of the ERF outweigh the policy support in the NPS and the stated benefits of the REP. The key issues are:

- the ERF would not operate as an effective Combined Heat and Power (CHP) facility, supplying low carbon heat to nearby users, because the identified heat demand within the area could be supplied by the Applicant's existing energy from waste plant, the Riverside Resource Recovery Facility (RRRF), which is adjacent to the proposed REP;

- the ERF would not comply with the Government's NPS for Energy as it is likely that it would incinerate recyclable waste, and would thereby not effectively implement the waste hierarchy, where recycling sits above energy recovery (NPS EN-1);

- the principal source of fuel for the ERF is likely to be fossil fuel; the facility would therefore not generate principally renewable energy;

- the ERF is unlikely to meet the Mayor's Carbon Intensity Floor (CIF) emissions level, which all new incineration facilities in London are required to meet[1] through generating both heat and power from truly non-recyclable waste to support transition to a low carbon economy. The GLA disagrees with the Applicant's claimed

[1] See London Plan policy 5.17Be

ERF operational capability and performance against the CIF. Demonstrable demand for the heat produced is also considered to be essential for meeting the CIF;

- the ERF is not required for managing London's non-recycled waste and would be likely to be detrimental to achieving the Mayor's reduction and recycling targets, set out in his London Plan and London Environment Strategy, which are essential components of achieving a circular economy;

- there is no commitment to deliver feedstock to the ERF by river. The GLA is concerned that no assessment has been made of the environmental effects of waste transfer through the riparian transfer stations, and considers this to be a major flaw in the Environmental Impact assessment (EIA); and

- the ERF is predicted to have adverse effects on air quality for current and future residents.

2.2. These issues are addressed in turn in below.

3. The Mayor's Representations

WR1: Heat Offtake

3.1. This section provides details of the GLA's objection to the application with regard to heat offtake from the ERF.

3.2. While in principle the GLA supports district heating arrangements to supply decentralised, low carbon energy as one of the mechanisms for reducing climate change, officers are of the view that the CHP benefits described in the application are overstated and would either not be delivered or would detract from initiatives to realise the unutilised heat available at the existing RRRF. Consequently, the proposed REP is not considered to have any feasible CHP potential and therefore is not in conformity with the Mayor's policies for heat utilisation set out in the LIR.

<u>Projected demand</u>

3.3. The Applicant's study of heat demand (document 5.4 Combined Heat and Power Assessment) focuses on heat supply from the proposed ERF and ignores the fact that the existing adjacent RRRF is also equipped with heat offtake as a planning requirement in readiness to supply a future a heat network. Whilst the existing RRRF is able to connect to new and existing homes and buildings and has been operational since 2011 it has yet to supply any heat. The RRRF is equipped with an unutilised heat off-take arrangement with a capacity of 28.6 MW that could supply up to 200 GWh of heat each year.

3.4. The RRRF was originally granted consent under Section 36 of the Electricity Act 1989 in 2006, and condition 47 required the following:

"A facility shall be provided and maintained within the development to enable steam pass-outs and/or hot water pass-outs and reserve space for the provision of water pressurisation, heating and pumping systems for off-site users of process or space heating".

3.5. Subsequently, consent was granted in 2015 for variations to the original consent and a new condition 32 was added, which states:

"Within 1 year from date on which this permission was deemed granted, the Company must prepare a Combined Heat and Power (CHP) feasibility review assessing potential commercial opportunities for use of heat from the development, which must be submitted in writing to the Council for its approval. The review must provide for ongoing monitoring and full exploration of potential commercial opportunities to use heat from the development as part of a Good Quality CHP scheme (as defined in CHPQA Standard issue 3), and for the provision of subsequent reviews of such opportunities as necessary. Where viable opportunities for the use of heat in such a scheme are identified, a scheme for the provision of the necessary plant and pipework to the boundary of the site shall be submitted in writing to the Council for its approval. Any plant and pipework installed to the boundary of site to enable the use of heat shall be installed in accordance with the agreed details".

3.6. The GLA, through the Mayor's Decentralised Energy Enabling Project (DEEP), has recently supported and funded the London Borough of Bexley (LBB) to study the feasibility of supplying heat from the existing RRRF2. The study looked at the current and forecast heat loads within a feasible distance of the RRRF.

3.7. The study found that it would be many years, if not decades, before the heat demand within the potential catchment area exceeded the existing supply capacity of the RRRF. The catchment area for heat offtake from both the RRRF and the proposed ERF includes the Thamesmead and Abbey Wood Opportunity Area (OA) and the Bexley Riverside OA, where the Mayor is seeking development of a minimum of 8,000 and 6,000 new homes respectively. Homes have begun to be constructed in the Thamesmead OA, whereas Bexley Riverside OA is approximately 5 years behind this. Whilst this evidences that significant growth is projected in the area, the study concluded that the projected heat demand in the area could be met entirely by the existing RRRF using only 70% of its heat supply capacity.

3.8. It is noted that the report states that there may be some heat demand outside the study area and it must be demonstrated that it is viable to connect to the more distant heat customers and whether there is sufficient heat network project income. It is noted that the report states that there may be some heat demand outside the study area. Should the Applicant highlight the potential to supply these more distant heat demands to demonstrate they have considered CHP, the Applicant should be asked to set out the measures they would put in place to ensure that it would be viable to connect to the heat customers whilst maintaining an affordable heat price.

[2] Thamesmead and Belvedere Heat Network Feasibility Study: Work Package 1, London Borough of Bexley, May 2019. Included in Appendix 2.

Public involvement

3.9. The Peabody Housing Association and the Applicant were part of the heat study steering group. The report, published in May 2019, concluded that a heat network connected to the RRRF supplying the forecast heat demand in the area would be feasible and viable. How the heat network could be delivered would be the subject of further work. Given the high initial investment cost for the network and the uncertainty of future income from heat sales, the study indicates that project is unlikely to be of interest to the private sector without public sector support. The public sector could mitigate some of the risk through strong local planning policy and decisions encouraging connection to the network along with the connection of public sector buildings. The public sector could also bring lower cost funding or grant, such as the Government's Heat Network Investment Programme or the Mayor's Energy Efficiency Fund, which would also help share the risk.

3.10. At present, there is still considerable uncertainty as to when the RRRF would be able to export heat for use in a local heat network.

3.11. The GLA considers that the proposals for CHP in the DCO application have not progressed to the level necessary to demonstrate that CHP is feasible and will be delivered, in line with London Plan policy requirements. Experience of developing CHP infrastructure at other incinerators on London has shown that genuine engagement and commitment to establishing heat offtake, in consultation with local authorities and local communities, is essential. The DCO application demonstrates no evidence of such engagement or commitment.

3.12. NPS EN-3, paragraph 2.5.27 states that *"Given the importance which Government attaches to CHP, for the reasons set out in EN-1, if an application does not demonstrate that CHP has been considered the IPC should seek further information from the applicant. The IPC should not give development consent unless it is satisfied that the applicant has provided appropriate evidence that CHP is included or that the opportunities for CHP have been fully explored"*.

3.13. The GLA is of the view that although the Applicant provides some information, the application does not contain sufficient evidence of the proposed plant configuration, nor have opportunities for CHP been fully explored. The GLA has considerable experience of working with developers of EfW facilities in London where CHP has been seriously addressed, and understands the time and commitment required to deliver such undertakings. The GLA's understanding of what is required, based on experience on other recent incineration projects, is set out below.

3.14. The Department of Environment and Rural Affairs (Defra) publication on the incineration of municipal waste3 identified the key issues affecting energy recovery from incinerators. While electricity can easily be supplied into the national grid once an appropriate connection is established, heat will need to be used locally and will be dependent on identifying and establishing a local need by using a district heating system for buildings/housing and/or supply of heat to a factory for industrial use. To date achievement of heat offtake in London has required significant public sector involvement.

3.15. The two long-established incinerators in London, the Edmonton EcoPark in Enfield and the South East London Combined Heat and Power (SELCHP) in Bermondsey, operated in electricity-only mode for many years. Edmonton has now started the construction of a new Energy from Waste (EfW) plant with a heat offtake. The offtake has been included as a result of the local borough's response to the Mayor's Upper Lea Valley Opportunity Area Planning Framework, the Mayor's previous Climate Change Strategy, and development support funded by the GLA. Heat offtake from SELCHP, which is owned by the private company Veolia, was finally established after some 15 years. The borough (Southwark) required Veolia to install the heat network as part of the Council granting planning permission for a new waste management facility. The Veolia planning application did not meet the recycling and carbon reduction targets required by the London Plan waste and energy policy targets and it was agreed that the shortfall could be delivered by supplying low carbon heat to Southwark housing from SELCHP to displace the use of gas in boilers. The heat network currently supplies 2,500 homes owned by the London Borough of Southwark.

3.16. A recent example of public sector involvement is the new Viridor incinerator, which is under construction at Beddington in the London Borough of Sutton. The plant was consented under the previous Mayoral administration. GLA planning and environment officers worked closely with Sutton Council to ensure that the plant was procured with an efficient heat off-take and that Viridor worked closely with Sutton Council to establish the heat supply arrangements as well as make financial contributions to associated initiatives and form a heat network working group. The GLA provided Sutton Council with development support for the first phase of the heat network, with the first connections to be made in the next year. The GLA is currently supporting the development of the second phase of the heat network.

Technical information

3.17. The Applicant has not provided sufficient detail on the heat offtake provision from the proposed REP, noting only that it is CHP-ready.

3.18. The level of detail to be provided in the DCO application should be similar to that agreed with the GLA for the incinerator developments at Beddington, Sutton, and the proposed replacement plant at Edmonton, Enfield. The following technical details of the project should be required to ensure it has the capability to enable a heat network at a later date:

[3] Defra 2013: Incineration of Municipal Waste

- that the steam turbine will be procured with tappings, stating the steam pressures and temperatures and complete with suitable isolation values for a steam off-take to supply the district heating heat exchangers;

- that there is sufficient space for the necessary pipework and equipment to be installed within the site boundary; and

- that a route for the district heating pipework is safe-guarded to the site boundary and in a position that is practical to connect to the off-site heat network.

Synergy between RRRF and the proposed REP

3.19. The application states at Section 3.4 of the Project and its Benefits Report (document 7.2) that "*Deploying both REP and RRRF would effectively double the amount of heat available to supply local networks. In addition, having the two facilities provides the necessary redundancy cover during events when one plant is not available (eg. under maintenance) thereby ensuring continuity of supply to those users (including households) benefitting from heat supply*".

3.20. The CHP Study (document 5.4 section 10.4) also suggests that the proposed ERF would provide synergistic benefits to the existing RRRF, complementing the RRRF by increasing the resilience of the heat supply system.

3.21. The GLA does not agree that the two ERFs could double the amount of heat available to supply the local networks and provide redundancy. The two modes of operation must be independent of each other to be effective. Should both facilities supply heat at more than 50% of their capacities and one fails, then the remaining operating plant would have insufficient capacity to meet the heat demand supplied by the other plant. The two plants could not be regarded as providing adequate redundancy for each other.

3.22. Furthermore, the GLA is also concerned about the reliability of the heat supply where one ERF provides a back-up facility for the other ERF. Heat from the back-up facility would only be called-upon for approximately 10% of the time each year given the typical annual availability of an energy from waste plants is 90%. Under these circumstances, the back-up ERF would be operating inefficiently as a power-only generator for the majority of the year in order to be ready to supply heat when the lead ERF plant supplying heat is shut-down for planned maintenance. In addition, during times of a plant outage, with the other ERF taking over to supply the heat demand, the heat network customers would be vulnerable to a single plant failure resulting in a complete loss of heat supply. The likelihood of this risk is unacceptably high and is normally mitigated by the heat network operator installing an adequate number of standby boilers to operate independently of the ERF in such as case.

3.23. The GLA considers the principle of one ERF backing-up the other to increase the resilience of the heat supply system would lead to the inefficient operation of the standby plant, and that the reliability of the heat supply would fall short of what is accepted as good district heating practice.

3.24. In this regard, the GLA consider that the purported synergies are overstated and, as a result, so are the project benefits.

Summary

3.25. The GLA objects to the proposed REP on the basis that the Applicant has overstated the CHP opportunities in its application. As there is no evidence of foreseeable heat demand, the proposed ERF would be likely to operate in power-only mode and be a net carbon producer by virtue of its low electricity generating efficiency. The ERF would not speed-up the transition to low carbon as required by EN-1 paragraph 1.7.2. It would in fact slow down the transition as it would likely be a carbon-producer. The proposed ERF is not, in the Mayor's view, supported by planned development as required by the London Plan, draft London Plan and London Environment Plan (LES).

WR2: Renewable Energy

3.26. The Applicant has emphasised the contribution of the ERF to renewable energy generation; however, the proportion of energy output from the ERF which qualifies as renewable is ultimately a function of residual waste composition. Subject to the available feedstock sources, and recycling practices in London, the renewable proportion of energy generated may be 50% or less. The GLA objects to the development of a facility for which the principal fuel source would be fossil fuels.

3.27. In its guidance document Energy from Waste: A guide to the debate (DECC, Feb 2014), the Government makes it clear at paragraph 67 that "energy from residual waste is only partially renewable due to the presence of fossil-based carbon in the waste, and only the energy contribution from the biogenic portion is counted towards renewable energy targets".

3.28. The above definition is supported by the Mayor and forms the basis of his view that, whilst certain elements of the proposed REP (i.e. Anaerobic Digestion, solar PV and battery storage) would make a positive contribution to reducing the UK's reliance on fossil fuels and decarbonising the economy, the proposed ERF would not make a significant contribution.

3.29. The proposed feedstock for the ERF is Municipal Solid Waste (MSW)4, which may arise from local authority collections or from commercial and industrial sources. Research commissioned by Defra5 indicates that the biodegradable proportion of local authority collected waste nationally is circa 61%. However, the renewable proportion of energy generated is lower than this, since biodegradable materials (particularly food waste) tend to have a lower calorific value. The portion of the waste stream feedstock that comprises plastics cannot provide renewable energy as plastics are derived from fossil fuel (oil).

[4] Defined here as including commercial and industrial waste similar in nature to household waste in line with the EU definition

[5] 'Analysis of Biodegradability of Residual Waste Based on Subtraction of Diverted Materials' (2014)

3.30. The Applicant's own assessment of waste composition at paragraph 3.2.5 of Document 7.2: The Project and its Benefits Report states that a waste composition analysis undertaken for the existing RRRF (undated) shows a biogenic fraction of around 50%. On the understanding that feedstock would be 50% biogenic in mass terms, energy output from the ERF will necessarily be less than 50% renewable, due to the relatively low calorific value of biogenic wastes. The contribution of the ERF to meeting renewable energy and low carbon targets must therefore be adjudged in this context.

3.31. The relevance and significance of renewable energy production relates to the need to decarbonise the economy. Other sections of this document (WR1 Heat Offtake and WR3 Carbon) explain how, notwithstanding the renewable content of the feedstock, the efficiency of electricity production of the ERF in power-only mode, in contrast to the carbon intensity of the grid electricity that the ERF will displace, would result in the facility being a carbon producer until CHP is implemented. As the ERF would not generate low carbon energy it would not contribute to the national policy drive to decarbonise the power sector. Consequently, bringing onstream a new facility that is neither low carbon nor more than 50% renewable would delay achievement of the Government's targets for transition to a low carbon economy.

Conflict with national policy

3.32. NPS EN-1 deals with the urgency of the need for new electricity capacity. However, it makes clear that the UK cannot afford for new electricity capacity to be based on fossil fuels. At paragraph 3.3.16 it states that, due to the long life of energy infrastructure, "failure to decarbonise and diversify our energy sources now could result in the UK becoming locked into a system of high carbon generation, which would make it very difficult and expensive to meet our 2050 carbon reduction target". The GLA considers that the ERF element of the proposed REP would not contribute to decarbonisation of electricity capacity when operating as a power-only plant, without any prospect of CHP, and would therefore not comply with national policy objectives.

3.33. Section 3.4 of NPS EN-1 addresses the role of renewable energy generation and the sources that are likely to be developed. The need to develop renewable energy generation capacity is considered to be particularly urgent to meet national 2020 and 2030 targets and decarbonise the power sector. The Mayor's support for this policy position is set out in the London Plan and LES. However, in considering the contribution from various renewable energy sources, the Government position set out in paragraph 3.4.3 of the NPS is that only the biodegradable fraction of waste is renewable.

3.34. The GLA considers that NPS policy support needs to be considered in the light of waste -feedstock, as the majority of waste feedstock to the ERF is unlikely to comprise a renewable resource.

3.35. NPS EN-1 considers the need for fossil fuel generating capacity at paragraph 3.6.8, noting it can provide back-up for when generation from intermittent renewable generating capacity is low and to help with the transition to low carbon electricity generation. It clearly states that *"it is important that such fossil fuel generating capacity should become low carbon, through development of CCS[6], in line with carbon reduction targets"*. The NPS does not support fossil fuel generation in the absence of CCS. The GLA is concerned that the proposed REP is principally a fossil fuel generation station unless CHP is implemented from the outset and that, in the absence of CCS, it does not comply with NPS EN-1.

Use of biogas

3.36. The application states at paragraph 5.4.6 of the Planning Statement (document 7.1) "Biogas would be upgraded to biomethane which could either be used for Compressed Natural Gas (CNG) production or injected into a local gas network. CNG could be used as fuel for on-site vehicles however if this is not feasible then REP would incorporate a 'CHP engine' to generate electricity and heat to be used on-site".

3.37. The GLA welcomes the proposed use of biogas for vehicle fuel or for injection into a gas network. However, it is concerned that the application does not include details of how this would be implemented, in particular, that there is no provision in the scheme for a gas offtake pipe. The GLA is concerned about the incorporation of a CHP engine because there are no details about the onsite heat usage, and therefore whether the biogas would be efficiently utilised. The air quality chapter of the ES showed that the most significant impacts of the CHP, if incorporated in the wider scheme, would be most severe within the site boundary. However, the use of a gas engine CHP on site would also contribute to London's overall regional emissions. By contrast injection of gas into the grid would have no additional impact on regional air quality as it would be displacing gas from other sources and used in existing appliances elsewhere. The use of biogas produced on site to fuel road vehicles or river vessels serving the site would result in reduced emissions compared to a diesel fuelled alternative. The use of onsite CHP to burn the biogas would therefore be the least preferred option for air quality and should be avoided

3.38. The project description as set out in Chapter 3 of the ES (document 6.1) describes the gas as: "*The biogas resulting from the Anaerobic Digestion process would be passed through a gas-upgrading system (biogas to biomethane) integrating a buffer gas storage tank based on membrane technology, suitable for Compressed Natural Gas (CNG) production and/or for injection into a local gas network. CNG can be used as a fuel for vehicles, including through conversion of onsite vehicles (which shuttle waste containers within the site). CNG would be the preferred option if feasible and viable. However [if] a CNG option is not progressed then REP would incorporate a "CHP engine" which would use the biogas to generate electricity and heat, which could be used to support the Anaerobic Digestion process or added to energy export from the other aspects of REP*".

3.39. The use of biogas for electricity would significantly reduce the conversion efficiency of the renewable energy and would result in avoidable air emissions. The GLA considers that only direct use of gas through injection to the grid or in vehicles is appropriate, and

[6] Carbon Capture and Storage

that the necessary infrastructure, including storage, should be provided to support this use.

WR3 Carbon

3.40. National policy[7] requires that the planning system should support the transition to a low carbon future in a changing climate, including supporting renewable and low carbon energy and associated infrastructure. The Mayor of London has a statutory[8] duty to address climate change and the LIR sets out the importance of carbon reduction in this regard. London has established a target to be zero carbon by 2050. London's pathway to zero carbon[9] identifies four decarbonisation scenarios to meet this target, none of which have any requirement for new EfW facilities.

Importance of CIF policy to London

3.41. To deliver a low carbon future, the GLA, through Mayoral Policy, expects all of London's EfW facilities to only manage truly non-recyclable waste and maximise the use of both the heat and power generated. To achieve this, a minimum carbon emissions level for energy generated from waste has been set, known as the Carbon Intensity Floor (CIF). The CIF was set in addition to developing a wider emissions performance standard (EPS) for the management of all London's municipal waste activities, including waste transport. Meeting the CIF plays a key role in achieving the EPS.

3.42. The CIF was first introduced in 2011 and was set at a time when new energy generation in the UK (also known as the 'marginal source' of energy generation) would be generated using combined cycle gas turbine (CCGT) technology producing 400 grams of CO2 equivalent per kilowatt hour of electricity produced. Since then, generation from renewable sources has been increasingly taken up nationally and this value has been overtaken, with the marginal source now being around 300 grams of CO2 equivalent per kilowatt hour of electricity produced. For this reason, the LES explains how the CIF will be reduced in future in line with the EPS target for London to deliver greenhouse gas savings of -0.167 tonne CO2e per tonne of waste managed by 2030. Achievement of this target has been modelled assuming that all of London's EfW facilities achieve an overall CIF target of 300 grams of CO2 equivalent per kWh of electricity. The CIF level will likely continue to be tightened, as the carbon intensity of the marginal source of electricity generation will only fall further.

3.43. Waste going to EfW plants often contains large amounts of high value materials for which recycling would realise a substantial carbon benefit. Reducing the amount of high carbon materials (particularly plastics) going to EfW plants will deliver GHG savings and reduce the reliance on fossil fuels. This will drive change and investment within boroughs and with facility operators, to ensure that truly residual waste is used to generate both heat and power for the benefit of Londoners.

[7] National Planning Policy Framework (NPPF)
[8] Mayor of London Act (2008)
[9] Mayor of London, December 2018: Zero Carbon London: A 1.5°C Compatible Plan

Lack of evidence as to how CIF will be achieved

3.44. The GLA considers that the Applicant has not provided sufficient evidence to demonstrate how the proposed ERF will meet the CIF in order to comply with London Plan Policy 5.16 and draft London Plan Policy S18. Specifically, the GLA considers that the Applicant has not provided sufficient evidence to:

1) demonstrate how the proposed ERF will operate at the claimed electrical efficiencies in determining performance against the CIF noting that the current ERF plant (RRRF) adjacent to the site for the proposed ERF appears to operate at a carbon intensity of 617gCO2/kWh (see chart 1 below); and
2) satisfy examples of 'demonstrable steps' set out in para 9.8.13 of the draft London Plan to effectively meet the CIF.

3.45. On the GLA's advice, the Applicant has used the GLA's online Ready Reckoner tool developed by independent consultants Eunomia to determine the performance of the proposed ERF facility against the CIF level for the GLA to review. The results of this assessment[10] are reproduced in Table 1 below.

Table 1 Applicant's CIF Score using GLA Ready Reckoner

Scenario modelled	*Gross Electrical Efficiency*	*Gross Heat Efficiency*	*CIF performance (grams CO_2eq per kWh electricity generated)*	*Meets current CIF level?*	*Meets the revised CIF level?*
1. Generating electricity only	34.26%	-	400	Yes	No
2. Minimum CH	34.03%	1.47%	394	Yes	No
3. Maximum CHP	32.41%	16.14%	323	Yes	No

3.46. The results from the Applicant's assessment shows that Scenario 1 just meets the CIF level which has been set as the minimum performance under the current and draft London Plan policy, and the LES. All three scenarios fall short of the 300 gram level, which is due to be tightened as set out in the LES, in order to accelerate the transition to low carbon and renewable energy generation.

[10] Taken from the Applicant's CIF score book titled 'London GHG Ready Reckoner V2 Issued Cory - REP with RRRF waste.xls submitted to the GLA on Wednesday 17 April 2019.

3.47. The Applicant has confirmed that the stated gross electrical efficiency of the proposed ERF would be 34% and that this would be achieved using moving grate technology. Typical EfW electricity efficiencies are in the range 15% to 27% (reference: Energy from Waste - A Guide to the Debate, DEFRA 2014). The Applicant has stated that the proposed ERF would be optimised for higher efficiency and that this would include recovery of energy from the latent heat of evaporation (from the flue gases). Whether such exceptionally high efficiency would be achieved in practice should be treated with caution unless it is evidenced by data from commercially operational plant.

3.48. Scenarios 2 and 3 require utilisation of heat. As noted above (WR1 Heat Offtake), the GLA lack do not consider that CHP is a realistic proposition for the proposed ERF without detracting from the existing commitments of the RRRF. The Applicant also used the GLA's Ready Reckoner tool to assess the performance of the existing RRRF facility against the CIF, which came out at 415grams CO2eq per kWh of electricity produced. This figure is considerably lower than the 617grams CO2eq per Kwh of electricity produced figure that the RRRF facility is reported to operate at in, as set out in a report commissioned by the Applicant[11]. See Chart 1 and para 356 below provide further details.

3.49. Due to the concern regarding the way the proposed ERF is likely to undermine London's established targets for carbon reduction, the GLA commissioned Eunomia to undertake a detailed analysis of the Applicant's CIF calculations. The report was received in April 2019 and is attached as Appendix 1 to this document. In summary, the report came to the following conclusions:

- Calculations undertaken using Eunomia's Ready Reckoner, using assumptions provided by Cory, suggest that the ERF will just meet the current CIF target of 400 g CO_2e / kWh electricity. This is however contingent on the facility achieving, in practice, a very high gross electrical generation efficiency of 34%.

- The Ready Reckoner tool calculates the energy generation benefits using the Net Calorific Value (NCV). The aforementioned electrical generation efficiency calculation of 34% will not be valid if the facility is, in fact, recovering some additional energy from the water vapour from the flue gases; this appears to be the case from information provided in the Applicant's CHP assessment (document 5.4). Use of the NCV to calculate the fuel's energy content in this case will tend to overstate the efficiency by 20-30%. In this situation it would be more appropriate to use the Gross Calorific Value (GCV) of the input waste to calculate the efficiency, or to adjust the energy output values accordingly. When the GCV, rather than the NCV, is used to calculate the energy balance, the proposed ERF fails to meet the target in power-only mode by some distance.

- London's EPS has been set assuming all EfW facilities meet a target of 300 g CO_2e / kWh electricity by 2030. Even in the best-case scenario presented by Cory with regards to CHP development, the ERF will fail to meet this target. The proposed ERF's design will therefore undermine London's ability to meet the EPS target in 2030.

- Although the facility will have the technical potential to operate in CHP mode, it is not clear that this potential will be realised, given that the adjacent Cory Riverside

[11] https://www.coryenergy.com/wp-content/uploads/2018/01/Cory-Carbon-Report-v1.1.pdf

Resource Recovery Facility (RRRF) could meet the feasible heat demand with 70% of its heat supply capacity. It is therefore most likely that the ERF will continue to generate only electricity.

3.50. A further consideration with regard to carbon is the substantial carbon benefit associated with materials recycling. This is, in large part, associated with a reduction in the energy consumption associated with the processing of virgin (raw) materials. The development of excess EfW capacity in London (considered in detail in WR4 Implications of Excess Waste Capacity) carries the risk that recycling levels are curtailed. In considering the possible contribution of the ERF to energy generation, it is important to take a whole system approach, accounting for the energy impacts of all forms of waste management. In the event that the ERF limits the proportion of waste recycled, in whole system terms energy outputs from the ERF may ultimately be offset by the loss of these recycling energy benefits.

3.51. Given the need to meet the EPS and the CIF, London needs to significantly increase recycling rates and develop additional pre-treatment facilities, which would remove plastic waste from the residual stream prior to it being sent for incineration. The best opportunities for this to be developed will come from it being included within new treatment capacity. However, there is no evidence that pre-treatment forms part of the proposed REP.

3.52. Based on these conclusions the GLA considers that the Applicant:

- has not provided sufficient evidence to demonstrate how the proposed ERF can meet the claimed energy generation efficiencies;
- appears to have overstated the claimed performance of the ERF against the CIF;
- has failed to include pre-treatment facilities in the REP which would reduce its ability to meet the CIF; and
- has not demonstrated how the facility will operate as an effective combined heat and power facility to meet the CIF.

Conflict with national policy

3.53. National policy in relation to the Government's commitment to transition to a low carbon economy as set out in NPS EN-1 and NPS EN-3 has been referenced above in WR2. Whilst the GLA accepts that the decision on whether development consent should be granted will be made in accordance with the NPSs, they were published in 2011 and the Government's policy position had changed since adoption of the NPSs. Therefore, the up-to-date policy position is an important and relevant consideration.

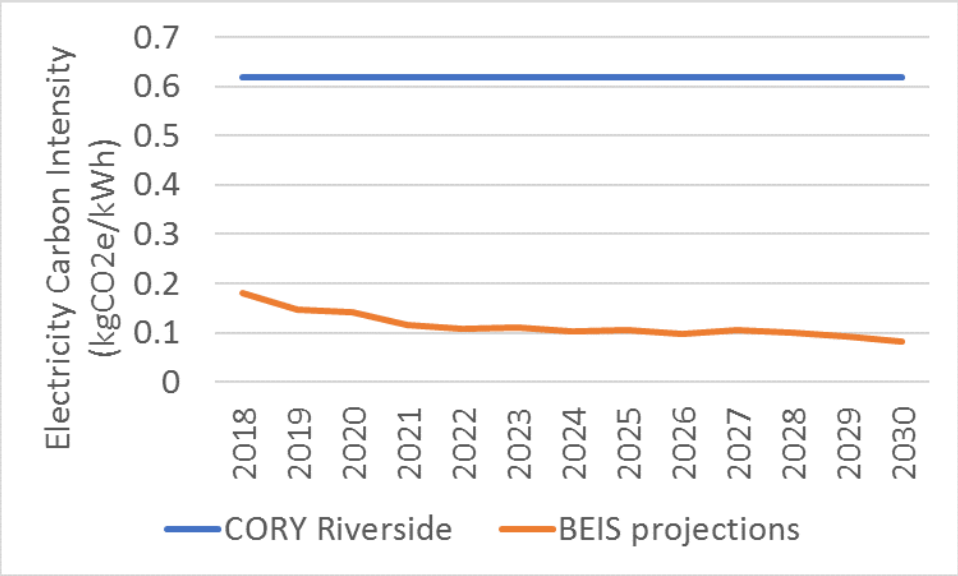
3.54. Whilst not yet formally adopted by Government, the Government's independent climate advisors, the Committee on Climate Change, in its latest report12 recommends that government introduces a net zero carbon by 2050 target for the UK.

[12]Committee on Climate Change, May 2019: Net Zero The UK's Contribution to Stopping Global Warming

3.55. Energy from waste does not make a meaningful contribution to this target. While the CCC's 2018 Progress Report to Parliament recommended that, in addition to current commitments, a further 9-12 GW per annum of low-carbon generation would need to be contracted to come online by 2030, in order to reduce electricity sector emissions to below 100 gCO_2/kWh (75% low carbon generation), there is a large pipeline of onshore and offshore wind, and solar PV projects that could be deployed over this time period.

3.56. However, the electricity produced from the existing RRRF has a carbon intensity more than three times the national grid average. The grid average is only projected to fall further in future, as demonstrated in Chart 1 below. These projections are based on BEIS' electricity supply and dispatch modelling[13] to assess the likely development of different technologies.

Chart 1: **Cory RRRF carbon intensity vs BEIS projections**



3.57. Although it is acknowledged that the Energy NPS states that EfW facilities can be part of the energy generation mix in the UK, it is clearly stated that 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.

3.58. Furthermore, more recent modelling from the Committee on Climate Change (CCC) and the National Infrastructure Commission (NIC) since the Energy NPS include a greater emphasis on the ability of storage and flexibility in being able to meet demand in a low carbon economy.

[13] BEIS April 2019: Updated Energy and Emissions Projections 2018; and https://www.coryenergy.com/wp-content/uploads/2018/01/Cory-Carbon-Report-v1.1.pdf. The 'Cory' figure in Chart 1 above has been calculated by the amount of "total fossil CO2" divided by "energy generated" as reported by Cory.

3.59. Moreover, Anthesis conducted waste modelling behind the NIC report and showed that, under a high recycling scenario, there is likely to be excess EfW capacity in England by 2035. More information on the evidence supporting the likelihood of excess EFW capacity in London and the UK is set out in WR4 below. There is therefore no defined role for EfW in the future power system as large-scale renewables and flexibility options can provide the most cost-effective way to reduce carbon from electricity generation.

WR4 Implications of Excess Waste Capacity

3.60. The need for waste capacity is considered with regard to the statement in *NPS-EN1: National Policy Statement for Energy* Paragraph 3.4.3 which describes facilities generating electricity from waste as follows:

> *"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"*.

3.61. The GLA objects to the proposed ERF as it would not distinguish between *"waste that cannot be re-used or recycled with less environmental impact and would otherwise go to landfill"*, and waste that is capable of being reused or recycled with acceptable environmental impact. The GLA does not agree with the Applicant's statement in paragraph 3.3.7 of the Project and its Benefits Report (document 7.2) that *"fuel to be used in REP is non-recyclable waste"* as no evidence has been provided to support this statement and no pre-treatment is proposed. On the contrary, the Applicant has supplied projected composition data14 to the GLA which indicates a significant proportion of recyclable waste would be present in the feedstock. The treatment of recyclable waste in the proposed ERF would adversely affect the achievement of both the Mayor's target15 of 65% recycling by 2030 and the national target16 of 65% recycling by 2035. The evidence for this is discussed below.

3.62. The need for waste capacity is also considered in the context of NPS EN-3, which provides more detailed guidance regarding the issues to be considered in the decision-making process for waste combustion generating stations. Paragraph 2.5.70 makes it clear that the SoS is required, in making his decision, to *"be satisfied, with reference to the relevant waste strategies and plans, that the proposed waste combustion generating station is in accordance with the waste hierarchy and of an appropriate type and scale so as not to prejudice the achievement of local or national waste management targets in England and local, regional or national waste management targets in Wales. Where there are concerns in terms of a possible conflict, evidence should be provided to the IPC by the applicant as to why this is not the case or why a deviation from the relevant waste strategy or plan is nonetheless appropriate and in accordance with the waste hierarchy"*.

[14] Applicant's CIF score book titled 'London GHG Ready Reckoner V2 Issued Cory - REP with RRRF waste.xls submitted to the GLA on Wednesday 17 April 2019

[15] Set out in the Mayor's London Environment Strategy 2018

[16] Set out in the Resources waste Strategy 2018

3.63. Paragraph 2.5.65 of EN-3 advises that local authorities will be responsible for providing an informative framework for the amount of waste management capacity sought with a view to not causing disadvantage to reuse or recycling initiatives (paragraph 2.5.64).

3.64. This advice is further reinforced in paragraphs 2.5.66 and 2.5.67 of NPS EN-1 which require the applicant to examine the conformity of the scheme with the waste hierarchy and the effect of the scheme on the relevant waste plan or plans, and the extent to which the generating station and capacity proposed contributes to the recovery targets set out in relevant strategies and plans, taking into account existing capacity.

3.65. In summary, EN-3 indicates that capacity requirements and how they support or detract from recovery targets and other waste planning strategies are a relevant consideration for waste combustion generating stations. The GLA has considered the assessment provided in the DCO application, and has undertaken his own independent assessment, and objects on the basis that the ERF element of the proposed REP is not in accordance with the waste hierarchy and that it would prejudice the achievement of local and national waste management targets.

3.66. Further relevant national policy is set out in National Planning Policy for Waste (NPPW). The NPPW, published in October 2014, sets out the Government's ambition to work towards a more sustainable and efficient approach to resource use and management. Positive planning is said (paragraph 1) to play a pivotal role in a variety of ways, including:

"delivery of sustainable development and resource efficiency, including provision of modern infrastructure, local employment opportunities and wider climate change benefits, by driving waste management up the waste hierarchy".

3.67. Guidance as to the suitable siting of waste management facilities states that:

"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".

3.68. The GLA's view is that there is no requirement for additional energy recovery capacity to manage London's residual waste, and that the proposed ERF is not in a suitable location as there is no demand for the heat.

3.69. The RWS assesses national EfW capacity. The Evidence Annex to the RWS states, at section 4.3, that according to an internal analysis *"significant additional residual waste energy recovery capacity such as incineration or advanced conversion technologies – above that already operating or planned to 2020 – would not necessarily be needed to meet an ambition of no more than 10% Municipal Solid Waste (MSW) to landfill by 2035, if a 65% MSW recycling rate is achieved by that same year. The analysis assumes refuse derived fuel (RDF) exports remain at current levels"*.

3.70. The Evidence Annex goes on to state "*Tolvik Consulting Ltd carried out a similar assessment, bringing together existing reports around Energy from Waste, and concluded that there would not be a gap in incineration capacity in 2030, provided the 65% MSW recycling rate ambition was met*". The GLA concurs with this view.

3.71. The Evidence Annex to the RWS sets out the Government's thinking at the time of publication (December 2018) on introducing an incineration tax to divert waste higher up the hierarchy, noting that such a tax must complement and be introduced alongside other policies. The Evidence Annex to the RWS states that one of the key drivers determining the way in which waste is managed is financial cost. The Evidence Annex confirms the announcement in Budget 2018 that the Government will consider such a tax in the longer term if other policies do not lead to the change desired to meet the government's waste ambitions. The Government's views on an incineration tax were moved forward in April 2019 when, in a Commons debate on incineration on 9 April, the Prime Minister confirmed:

"We do want to maximise the waste sent for recycling rather than to incineration and landfill, but waste incineration plants play and continue to play an important role in reducing the rubbish send to landfill, and we do welcome work to drive down waste to landfill further.

"If wider policies don't deliver our waste ambitions in the future, including higher recycling rates, we will consider the introduction of a tax on the incineration of waste, which will run in conjunction with the landfill tax and take into account the possible impact on local authorities".

3.72. This demonstrates that Government believes that the cost of incineration is a factor in preventing waste moving up the waste hierarchy. It appears likely that the over-provision of EfW capacity in London would increase the risk of incineration gate fees coming down and run counter to local and national policy objectives to move waste up the hierarchy.

3.73. The UK is at an important juncture in national waste policy. The Government in its Resources and Waste Strategy (RWS) has focussed its policy approach and programmes primarily on driving down waste and significantly boosting recycling performance, led by four consultations on:

- Strengthening Extender Producer Responsibility requirements to put the 100 per cent of the cost for waste disposal of non-recycled packaging on to manufacturers, and to drive better packaging design standards to maximise reuse and recycling
- Setting a mandatory minimum level of recycling service for households and businesses
- Putting in place a deposit return scheme for food and beverage containers.
- Introducing a tax on plastics with less than 30% recycled content

3.74. This written representation provides evidence to support the Mayor's objection to the DCO application with regard to the lack of need for additional energy from waste capacity and how this would impact on moving waste up the waste hierarchy. It provides

details of how circular economy objectives and reduction and recycling targets at national and London policy levels would be adversely impacted by the proposed ERF.

London's waste capacity

3.75. The GLA has undertaken detailed modelling of London's current and future waste streams to support development of the LES, concluding that the proposed ERF is not required for managing London's non-recycled waste and would be detrimental to achieving the Mayor's reduction and recycling targets, which are fundamental in working towards a circular economy.

3.76. GLA waste mass balance projections demonstrate that if the Mayor's recycling targets are met, there will be no need for additional EfW capacity in London to manage London's residual waste over and above existing committed capacity. Moreover, modelling shows that if the Mayor's reduction and recycling targets are achieved, and EFW capacity outside of London managing London local authority waste is included, a significant surplus of around 300,000 tonnes per annum incineration capacity will exist in London by 2036. Waste arisings and management assumptions adopted in deriving these findings are as follows:

- waste arisings are matched to the London Plan model (i.e. 5% per capita reduction by 2031);
- recycling rates for household waste increase to 42% (2022), 45% (2025), then 50% (2030);
- municipal waste recycling rises to 65% (2030), with 5% of municipal waste being landfilled;
- includes existing or planned EFW facilities in London managing London's municipal waste (household waste, and commercial and industrial waste similar in nature to household waste); and
- includes EFW facilities located outside of London contracted to manage London's local authority collected waste (Lakeside and Severnside) estimated at 390,000 tonnes per annum.

3.77. In modelling London's EfW capacity, the GLA has accounted for all existing EfW facilities in London, as well as additional capacity to be developed at Edmonton (increasing from 550 ktpa to 700 ktpa), and a consented increase in inputs to the existing Belvedere site (increasing from 725 to 785 ktpa).

3.78. The LES, at Figure 48 on page 326, also indicates that achievement of the Mayor's recycling targets of 65% municipal solid waste overall and the 100% net self-sufficiency targets by 2030 would result in 153,000 tonnes per annum EfW capacity oversupply by 2030. Figure 48 estimates that London would require significant additional recycling capacity to reach these targets - around 1.4 million tonnes per annum

3.79. The modelling undertaken by the GLA in developing the LES therefore shows that, even in the absence of the proposed ERF, London will have significant surplus EfW capacity (circa 300,000 tonnes per annum) by 2036. Notwithstanding this, it is evident that the Applicant's own modelling (employing forecast assumptions which are favourable to the project) fails to support the case for an EfW facility at the scale proposed. The DCO application estimates a need for 272,300 tonnes per annum of additional EfW capacity by 2036, representing less than half of the EfW capacity that the Applicant intends to build (650,000 tpa) in its nominal case and only one third of the capacity proposed in the Applicant's maximum case of 805,920 tpa.

3.80. Table 2 compares the GLA's and the Applicant's projected waste arising figures and EFW capacity need estimates for managing London's non-recycled commercial and industrial waste.

Table 2: Projected EfW requirements for managing London's non-recycled commercial and industrial waste

Draft London Plan figures	**2031**	**2036**	These projected waste arising figures are not challenged by the Applicant or by the GLA Environment Team	
Expected Household, Commercial and Industrial Waste Arisings (tonnes)	8,369,000	8,550,000		
Applying waste arisings and recycling rates informing EFW capacity need Red = surplus capacity (-ve) Black = additional EFW capacity needed (+ve)				
	Cory projections		*GLA projections*	
	2031	**2036**	**2031**	**2036**
Waste assumed to EFW (tonnes)	2,845,500	2,910,300	2,257,000	2,313,000
H/hold waste recycling rate	60%	60%	60%	60%
C&I waste recycling rate	70%	70%	75%	75%
London EfW Capacity* (tonnes)	2,638,000	2,638,000	2,613,000	2,613,000
EfW Capacity Gap (tonnes)	+207,500	+272,300	-356,000	-300,000

*Includes London's three existing incinerators (Belvedere, SELCHP and Edmonton replacement) EfW under construction at Beddington Lane (275,000 tonnes per annum) + 390,000 tonnes per annum of London LACW contracted waste going for incineration at Lakeside, Colnbrook (90,000 tonnes pa) and Severnside, Bristol (300,000 tonnes pa) facilities.

3.81. The principal reason for the discrepancy between the respective assumptions is that the GLA challenges the Applicant's assumption that 100% of commercial and industrial waste is suitable for recycling or for treatment in conventional EfW facilities, such as the proposed ERF. Pages 94-100 of Appendix 2 of the LES set out the approach taken for estimating London's municipal waste arisings by defining the amount of household, commercial and industrial waste deemed to be municipal waste, and suitable for treatment in conventional EfW facilities. This approach for estimating and defining London's municipal waste is supported by Defra and the Environment Agency.

3.82. Table 3 sets out how the respective assumptions differ.

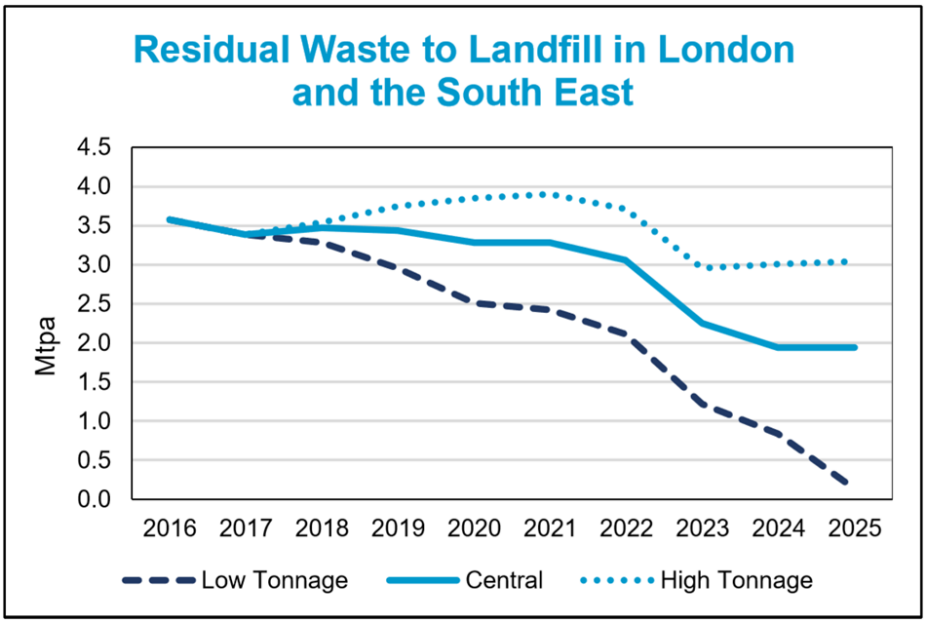
Table 3: Key waste modelling assumptions for comparison

Cory position	GLA position	Impact/Commentary
Waste assumed to EfW tonnes:100% of projected commercial and industrial waste arisings not recycled suitable for EfW	Waste assumed to EfW tonnes: GLA modelling suggests circa 80% of projected commercial and industrial waste arisings are suitable for energy recovery (EfW)	GLA modelling suggests around 80 per cent of commercial and industrial waste is suitable for treatment in conventional incineration facilities such as the proposed REP, with the rest deemed to go to recycling, landfill, pre-treatment, or (mainly industrial) waste requiring specialist treatment. This results in significantly less (600,000 tonnes per annum by 2036) waste produced that is deemed suitable for and going to EFW compared to the Applicant's modelling. As a result, there is a 300,000 tonne per annum EfW surplus in 2036 when facilities treating contracted London LACW waste are included.
London EFW capacity: 2,638,000 tonnes per annum by 2036	London EfW capacity: GLA modelling suggests 2,613,000 tonnes per annum by 2036.	This is 25,000 tonnes less London EfW capacity under the GLA's assumption, compared to the Applicant's.
65% recycling rate by 2031, including 60% rate for household waste and 70% for commercial and industrial waste	The LES sets a London wide 65% recycling target by 2031, including 60% rate for household waste and 75% for municipal-commercial and industrial waste	The LES models 75% of municipal-commercial and industrial waste being recycled to achieve an overall municipal recycling rate of 65% by 2030. Achievement of a municipal-commercial and industrial waste recycling rate higher than that assumed by the Applicant will result in less waste being available/suitable for treatment via EfW
London Plan projected waste arisings 100% correct	Same	N/A
100% availability of waste treatment facilities in London or outside	Same	N/A
No change to existing waste treatment capacity in London or outside	Same	N/A

*Municipal waste – applies the EU definition being household waste and waste similar in nature to household waste. Applying this definition encompasses most waste from commercial sources (eg business waste) and smaller amounts from industrial processes). More information on the methodological approach for determining municipal waste is set out in the 'Municipal Waste' section (pages 94-96) in Appendix 2 of the London Environment Strategy Evidence Base.

3.83. Independent analysts Tolvik prepared a market study in October 2018 looking at the options for residual waste treatment in London and the South East[17] illustrated below in Chart 2. The Tolvik study findings predict a zero gap under the low tonnage case by 2025 – with the implication of significant capacity oversupply by 2030. In the Tolvik study, the low tonnage case shown on Chart 2 assumes that circular economy targets are met. This assumption is consistent with the GLA approach.

Chart 2: Forecasted Residual Waste Disposal to Landfill in London and the South East (Tolvik[Error! Reference source not found.])



3.84. Chart 3 provides a comparison of the GLA's projections[18] with those of Tolvik's regional and national[19] forecasts, as well as those published by the Chartered Institution for Wastes Management (CIWM, the professional body for the waste industry)[20]. Taken together, these findings suggest that assuming achievement of recycling targets, the ERF feedstock capacity would rapidly exceed the capacity gap requirement regionally, as well as nationally.

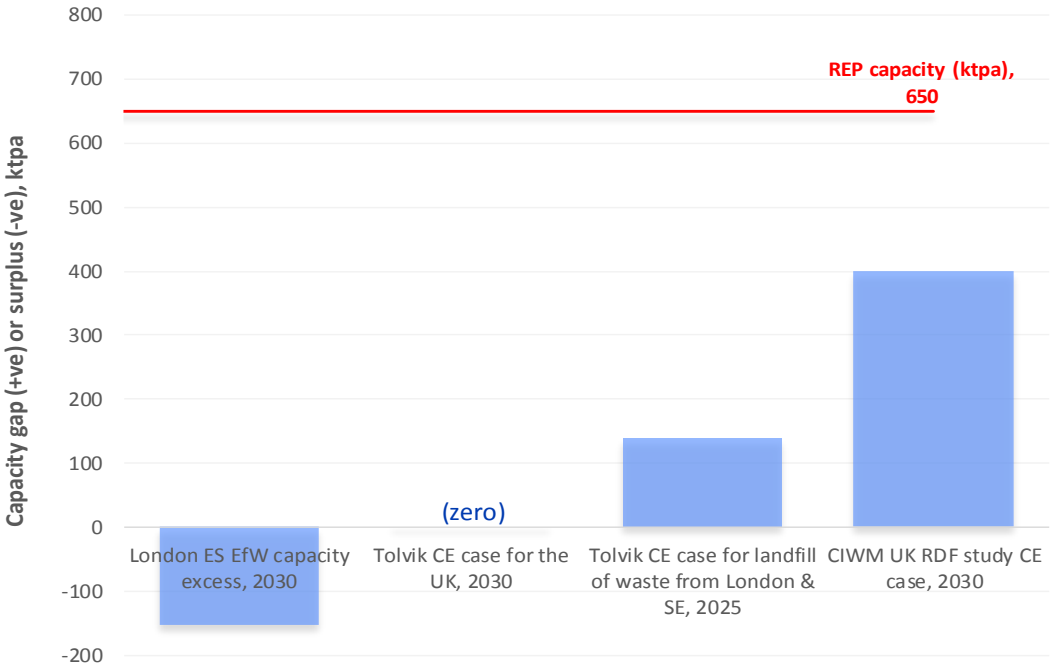
Tolvik 2018: Residual Waste in London and the South East

[18] Mayor of London 2018: London Environment Strategy

[19] ESA Residual Waste Capacity Gap Analysis

[20] CIWM Presidential Report 2018: RDF Trading in a Modern World

Chart 3: Comparison of residual waste treatment capacity gaps predicted by the Mayor, Tolvik[Error! Bookmark not defined.] **and CIWM**



3.85. As noted above, the GLA's projections indicate future oversupply of EfW capacity in London, while the Applicant's own forecasts suggest that the ERF capacity is more than double London's outstanding EfW requirement. These findings imply that the Applicant will attempt to satisfy feedstock requirements via import of waste from areas outside Greater London. To set the ERF feedstock requirement in the context of the broader regional need for EfW, the GLA has reviewed projections published by surrounding waste planning authorities within Waste Local Plan documents. A summary of the findings of this Waste Local Plan review is provided in Table 4 below.

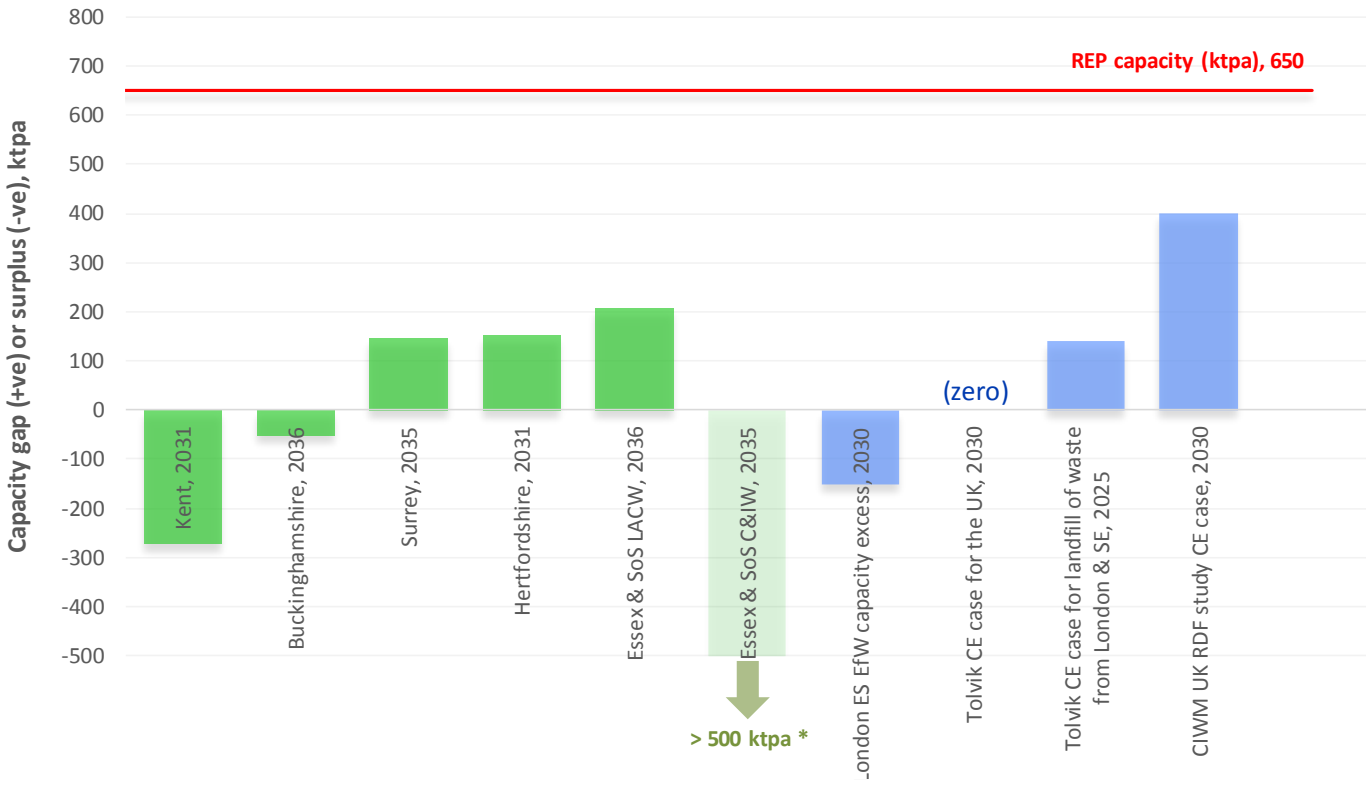
Table 4: Summary of EFW capacity need identified in Waste Local Plans

Waste Planning Authority	Document [21]	Reference	Forecast year	Relevant findings	Gap (+ve) or surplus (-ve)
Kent County Council	Early Partial Review of the Kent Minerals and Waste Local Plan 2013-30	Table A1, page 37.	2031	Identifies residual waste recovery capacity surplus of 274 ktpa.	-274
Essex County Council & Southend on Sea Borough Council	Non-Hazardous Waste Capacity Gap Update	Table 2, page 11.	2035	As a result of treatment of local authority collected waste (LACW), an *'MBT output to EfW or landfill'* of 209 ktpa.	+209
			2035	For commercial and industrial (C&I) waste, a 1,408 ktpa capacity surplus is projected at the end of the Plan Period assuming that consented capacity is developed.	-1,408
Surrey County Council	Surrey Waste Local Plan	Table 29	2035	Capacity gap identified for 'Other Recovery'.	+148
Hertfordshire County Council	Waste Local Plan Review Draft Capacity Gap Report for Initial Consultation	Table 37, p 5	2031	Residual capacity gap varying from a low case of 99 ktpa to high case to 210 ktpa (median 154 ktpa).	+154
Thurrock Council	Core Strategy and Policies for Management of Development (as amended)	Table 12, page 163	NA	Recovery requirements unclear. 94 ktpa identified as required for MSW, and between 138 and 190 ktpa for C&I waste. However, stated tonnages appear to focus on total waste arisings, with no differentiation between requirements for recycling and EfW.	NA
Buckinghamshire County Council	Buckinghamshire Minerals and Waste Local Plan 2016 to 2036	Policy 12, page 60	2036	*"The existing capacity for EfW recovery processes is 0.30 Mtpa, the indicative waste management capacity need at the end of the plan period is 0.247 Mtpa. This demonstrates that the existing EfW capacity is sufficient with respect to net self-sufficiency."*	-53
Medway Council			NA	Position in respect of waste capacity not clear.	NA

3.86. This analysis of Waste Local Plans demonstrates that while some surrounding waste planning authorities identify a future requirement for residual waste treatment, others anticipate substantial capacity oversupply. Taken together, these findings suggest that no clear case exists for development of EfW overcapacity in London in order to serve regional needs.

3.87. The following figures in Chart 4 brings together capacity gap findings from this initial review of Waste Local Plans alongside regional and national results above.

Chart 4: Summary residual waste capacity need across London, surrounding waste planning authorities, and the UK as a whole



Consequences of overcapacity

3.88. Oversupply of EfW capacity in London could have unacceptable consequences for implementation of the development plan and the LES. Approving the proposed ERF would leave London with a stranded asset that either would have to compete with other waste streams that could be managed further up the waste hierarchy (such as recycling), or would have to draw in waste from outside of London. Both of these alternatives are considered to be unsustainable, especially if the movement of waste to the ERF is long distance and does not use river transport.

3.89. The possible impact of over-reliance on EfW upon recycling is evidenced by a review of performance data published by Defra for England's local authorities, for the year 2017/18. Analysis of waste management methods reported for England's 123 unitary and disposal authorities shows that the 20 councils that have the greatest reliance on EfW achieved an average recycling rate of 28%. In contrast, the 20 councils reporting the lowest use of EfW achieved a significantly higher average recycling rate of 47%.

3.90. As noted above, recent (April 2019) statements by the Prime Minister show that the Government believes that excess incineration can undercut recycling and other waste management initiatives, preventing waste moving up the waste hierarchy. Moreover, the Prime Minister has indicted that the Government may consider the introduction of an incineration tax to prevent this outcome. Such a move, while welcomed by the Mayor, could lead to the 'stranded asset' position mentioned above depending on when such a tax is introduced.

3.91. Until such time as an incineration tax is introduced, however, excess EfW capacity is expected to result in an overly competitive market that would reduce prices for incineration, on a simple supply and demand basis, thereby drawing in waste that could otherwise be recycled and undermine the Mayor's policies for moving towards a circular economy. It may also result in waste being brought to the proposed ERF from further afield. The DCO application does not preclude waste feedstock being imported from outside of London and does not make any commitment to importing such waste by river. Strategic transport issues are discussed further in WR5 Waste Transfer Impacts.

Absence of pre-treatment

3.92. The proposed REP does not include for any pre-treatment of waste feedstock either on site or prior to transfer to the REP. The GLA considers this to be a significant failure of the proposal as it will likely prevent national and London objectives, on moving waste up the hierarchy, to be met. Waste delivered to the proposed REP is likely to include materials that can be re-used or recycled with less environmental impact. In addition to the need for pre-treatment to move waste management up the waste hierarchy, the need for London to meet the EPS and the CIF also requires additional pre-treatment facilities that would remove plastic waste from the residual stream prior to it being sent for incineration.

3.93. The best opportunities for pre-treatment to be developed will come from it being included within new treatment capacity. However, there is no evidence that this as part of the proposed REP. As such, given the difficulties in further improving kerbside recycling collections, the REP design constrains London's ability to meet the Mayor's 2030 recycling target.

Conclusion

3.94. In summary, the Applicant's own calculations do not support the case for sufficient residual waste being available from within London to avoid conflict with circular economy objectives and achievement of reduction and recycling targets. Based on the GLA's calculations, which place a lower expectation on the proportion of waste that could be treated in a normal incinerator, the adverse impact would be even greater. The consequences would be to either reduce the likelihood of London's circular economy targets being achieved or to draw in waste from surrounding authorities, with consequential effects on those areas' own waste management targets as well as adverse environmental impacts arising from transportation.

WR5 Waste Transfer Impacts

3.95. This written representation provides details of the GLA's objection to the application with regard to the environmental impact of the transfer of waste.

3.96. For the operational phase, TfL stated in its Relevant Representations that it considers the operational traffic impact of the proposed development are unlikely to result in a detrimental impact on the SRN. TfL has confirmed in an email to the GLA dated 16 May 2019 that its assessment of operational effects was confined to the impact of traffic on the SRN in the vicinity of the REP and did not address other issues relating to the transfer of waste feedstock within London, including the effects of waste feedstock deliveries to the riparian waste transfer stations, which have not been assessed by TfL so far but would need to be should the development go ahead. This section focuses on the wider strategic environmental issues associated with transport of the waste feedstock and is supported by TfL; TfL's representations with regard to construction traffic affects are provided in WR7 below.

Assessment of environmental effects

3.97. The GLA is concerned that the environmental effects of waste delivery have not been properly assessed in the DCO application. Part D of Policy SI8 of the draft London Plan requires proposals for new or extended waste sites to be assessed in terms of "the transport and environmental impacts of all vehicle movements related to the proposal - the use of renewable fuels from waste sources and the use of rail and waterway networks to transport waste should be supported". The GLA considers that transport of waste by road across London to the riparian transfer stations and the concentration of traffic in the vicinity of the riparian transfer stations would result in local environmental impacts that have not been assessed as part of the EIA. It also considers that the Applicant should provide commitments with regard to using the river for transportation of waste feedstock and by-products.

3.98. TfL, in its Relevant Representations, confirmed the importance of securing river transport of waste and wished to ensure that use of the jetty for a majority of waste deliveries is secured through the DCO, and that appropriate requirements would be put in place to deal with HGV traffic in the event of a jetty outage.

3.99. The DCO application provides no details and makes no commitments with regard to where the waste will come from and how it would be transported to the REP. The Environmental Statement (ES) Chapter 6: Transport (document 6.1) puts forward three possible scenarios for waste delivery to the REP. The 'nominal' scenario set out in ES Chapter 6: Transport is described as "likely", but no commitments are made with regard to transport mode and routeing other than that vehicle routeing "would adhere to the London Lorry Control Scheme". The three scenarios for waste delivery to the ERF are described in Chapter 6 of the ES as follows:

- nominal – 75% transported by river from riparian waste transfer stations (WTS) at Smugglers Way, Cringle Dock, Walbrook Wharf and Northumberland Wharf; 25% transported by road from local area and South East (LBB, Royal Borough of Greenwich, Kent, Essex and Central London);

- road delivery – 100% transported by road with 65% from Central London (Wandsworth, City of London, Tower Hamlets) and 35% from Tilbury
    - 65% from Central London (Wandsworth, City of London, Tower Hamlets) via WTS at Smugglers Way, Cringle Dock, Walbrook Wharf and Northumberland Wharf (25% each); and
    - 35% from Tilbury; and
- river delivery - 100% transported by river from riparian WTS at Smugglers Way, Cringle Dock, Walbrook Wharf and Northumberland Wharf.

3.100. The Applicant states, at paragraph 6.4.26 of ES Chapter 6, that "the 100% road and river scenarios ensure that REP has the necessary commercial flexibility to operate efficiently and effectively, even though the likelihood is that the majority of waste will be transported by river". This makes it clear that there is no commitment to transport of waste by river and the GLA do not consider that either of these scenarios has been adequately addressed This is considered to be wholly unacceptable and contrary to national and London policy. One of the main justifications made in the DCO application for selection of the Belvedere site is its location close to the river, and the potential for using the river as a sustainable mode of transport. The absence of any commitment to the majority of waste feedstock being transported by river is considered to be sufficient justification for the application to be refused.

3.101. In considering the likelihood as to whether the Applicant would in practice use the river for transport, it should be noted that the application (for example in paragraph 3.4.4 of the Planning Statement (document 7.1) and in the Transport Chapter of the ES (chapter 6, document 6.1) indicates that that existing WTSs in central London would be used for transfer of waste onto the river. There are two reasons why this is considered to be unlikely:

- sources of waste may not be close to the existing WTSs which may make it uneconomic for waste to be delivered to the riparian WTS for onwards transfer by river to REP; and
- there may be insufficient capacity at the existing WTSs; it should be noted that no assessment of capacity is included in the application and no indication is provided of any extensions and reconfiguration of the WTSs that may be required to handle the additional throughput (in broad terms, doubling the existing throughput at each WTS).

3.102. The existing WTSs that are currently used to transfer waste to the existing RRRF are owned by Western Riverside Waste Authority (WRWA), London Borough of Tower Hamlets and City of London. WRWA is the statutory body responsible for the treatment of waste from four London Boroughs - Hammersmith & Fulham, Kensington and Chelsea, Lambeth and Wandsworth. All these authorities are located adjacent or in close proximity to the WTSs that provide the transfer service for their waste.

3.103. Sources of waste from other London boroughs do not have direct access to any of the existing riparian WTSs, and therefore the transfer route would involve a longer road-borne delivery journey. The environmental effects of road-borne transfer to the WTSs has not been assessed in the DCO application, despite the application (ES Chapter 6) indicating that transfer of waste feedstock through the existing WTSs would be required not only for the 75% and 100% by river scenarios, but also the 100% by road scenario. As noted above, this would at least double existing throughput.

3.104. The Mayor considers it to be a major flaw in the EIA process that insufficient assessment has been undertaken of the environmental effects of the transfer of waste to the WTSs. In particular, there is no consideration of capacity at the WTSs in terms of vehicle movements in the surrounding roads and within the WTSs themselves, nor are waste handling and storage capacity addressed.

3.105. No evidence has been provided with the Application to shows that the WTSs would have sufficient operational capacity to handle potentially 100 per cent of the waste feedstock (estimated in Chapter 6 of the ES to be up to 805,920tpa, of which 25 per cent would be handled through each WTS). Insufficient capacity to manage and transport this additional waste through the existing WTSs would either lead to adverse environmental effects such as air pollution and noise caused by vehicles queuing at the entrance to the WTSs, or would lead to alternative means of transport being sought, such as direct (road-borne) delivery to the REP.

3.106. The GLA previously advised the Applicant at a meeting on 11 September 2018 that the air quality impacts from road and river traffic modelled in the ES should match the expected haulage routes identified in the transport and other assessments for the site. Similarly, if there are alternative operational scenarios, with different freight routes or modes, they should all be modelled to show the range of possible impacts, including upstream impacts on the freight networks. This advice has not been followed and remains wholly relevant.

3.107. The GLA therefore objects to the application on the grounds that the assessment of effects is inadequate, and that the likely consequences of granting development consent for the REP would be to create significant adverse effects on the environment in the vicinity of the existing WTSs and elsewhere in London.

WR6 Air Quality Impacts

3.108. This written representation provides details of the GLA's objection to the application on the grounds that assessment of air quality effects is inadequate in some areas and the GLA considers that Applicant's assessment, where it is adequate, indicates that there would be unacceptable effects on residents and other sensitive receptors in London.

3.109. The GLA's particular concern is that the extent of the area experiencing non-negligible detriments to Air Quality is not fully expressed in the assessment. For instance, the ES notes that a small number of explicitly modelled receptors are subject to increases in pollutant concentrations classified as "minor adverse", however comparison with the provided maps show that many more properties would fall within the area subject to the same level of increase than just those selected for explicit modelling.

3.110. For this reason the GLA does not agree with the Applicant's judgement that the air quality impacts of the scheme are "not significant".

Basis of assessment

3.111. By way of background, the EIA (reported in Chapter 7 Air Quality of the ES (document 6.1) assesses the combined impacts of the pollutant emissions from the proposed ERF, together with those from the existing RRRF and the Crossness Sewage Sludge Incinerator (CSSI). The emissions from the ERF, in g/s, are set out in Table 7.17 (page 50) of Chapter 7 of the ES, and in Table C.2.1.2 in the ES Technical Appendices C.2 Stack Modelling.

3.112. It is evident that the ERF would emit over 4 times as much nitrogen oxides as currently emitted by the RRRF and CSSI combined (it should be noted that Table C.2.1.2 says emissions of nitrogen dioxide; it is presumed that this should be nitrogen oxides, as in Table 7.17, which is the correct terminology). Emissions of arsenic would double, while emissions of other pollutants would increase by 10% to 80%.

3.113. The emissions modelled are based on the ERF operating to the draft EU Best Available Techniques Reference Document (BREF), which has tighter emission limits than the current Industrial Emissions Directive (IED) emission limits. This is a major concern as the new BREF limits may not be brought into legislation, in which case the current IED emission limits would apply to the operating permit; this means that the emissions could be significantly higher than those assumed in the modelling study. The Applicant has not presented any assessment of what the impact of the installation would be if it were operating at less restrictive emission limits.

Conflict with national policy

3.114. National Policy Statement EN-1 says at paragraph 5.2.9:

"The IPC should generally give air quality considerations substantial weight where a project would lead to a deterioration in air quality in an area, or leads to a new area where air quality breaches any national air quality limits. However, air quality considerations will also be important where substantial changes in air quality levels are expected, even if this does not lead to any breaches of national air quality limits."

3.115. The Environmental Statement shows that emissions from the proposed development would make exceedances of legal limits for NO_2 worse in Rainham town centre and potentially delay compliance with legal limits in Rainham, which may also affect the successful implementation of the Government's national plan for reducing NO_2 concentrations.

3.116. It is also the case that the ES shows large increases in concentrations of NO_2 and some metals across a number of areas affected by the proposed ERF, which are considered by the GLA to be substantial even where they do not lead to breaches of legal limits.

3.117. With regard to mitigation, para 2.5.45 states: *"Abatement technologies should be those set out in the relevant sector guidance notes as produced by the EA. The EA will determine if the technology selected for the waste/ biomass combustion generating station is considered Best Available Technique (BAT) and therefore the IPC does not need to consider equipment selection in its determination process"*.

3.118. The GLA is concerned that if new EU BREF emissions limits assumed in the ES are brought into legislation, higher emissions, and higher impacts, than stated in Chapter 7 of the ES would result. Whilst the regulation of emissions is a matter for consideration by the Environment Agency during the permitting process, it does mean that DCO approval could be granted approval based on incorrect information. The effect is evident in a comparison of Tables 7.1 and 7.2 in Chapter 7 of the ES, which shows that emissions could be some 67-100% higher than those assumed in the modelling study. This is of concern to the GLA, unless the new BREF emission limits could be guaranteed through imposition of a DCO requirement. In the event that development consent is granted, the GLA would wish to see a requirement limiting emissions to those on which the ES is based, i.e. the draft BREF limits (see section 9 of the GLA's LIR).

3.119. The outcomes for exposure of the public at local receptors are set out in the Tables in section C2.2 of the ES Technical Appendices C.2 Stack Modelling (covering the combined impact of the two incinerators and road traffic). The highest concentrations to which the public would be exposed due to the stack emissions (from the ERF, together with the RRRF and CSSI) are to the northeast of the site, in the London Borough of Havering. The results show "large" increases in exposure to arsenic and nickel for people living in Havering (as defined by EPUK/IAQM terminology in Table 20 in Chapter 7 of the EIA). The ES dismisses the "large" increases in exposure for some residents of LB Havering as being not significant, because the concentrations would be below the assessment level. However, section 5.2 of NPS-EN1 says "air quality considerations will … be important where substantial changes22 in air quality levels are expected, even if this does not lead to any breaches of national air quality limits". The approach in the EIA is therefore not considered to be wholly consistent with the NPS.

[22] The term 'substantial change' is not defined in the NPS and is not a term in the EPUK/IAQM guidance used to describe impacts in the ES.

Outcomes of the assessment

3.120. The results of the traffic modelling (assuming 100% of waste delivered by road) are set out in Appendix C.2 of the ES. These show negligible impacts at all receptors. It is noted, however, that the two receptors, R24 and R25, on the A206, where concentrations are amongst the highest, are not in fact worst-case receptors on this section of the road (for locations see Figure 7.3.2 of the ES Figures (Part 1 of 6)). R24 is 4.5 m from the nearest north-bound traffic lane (allowing for parked cars), but the northbound and southbound traffic lanes are separated by a wide central reservation of around 8 m, with the southbound traffic being 17.5 m away at the closest point. R25 is further away, at 11.5 m from the nearest lane. Neither of these properties are close to a junction, and a higher traffic speed is assumed, minimising emissions. The assessment has not assessed the impact of the scheme-related traffic at the residential property on the east side of the A206 Queens Road at its junction with James Watt Way. This residential property is around 6 m from the road, and emissions will be higher as it is at a busy junction with stop-start traffic. Without assessing the receptor at this junction it is not possible to determine whether the impacts would be negligible, nor whether the air quality objective would be exceeded. It is thus unclear as to whether the scheme would be consistent with the London Plan.

3.121. The proposed development lies within the Bexley Riverside OA, near to the Thamesmead & Abbey Wood OA, and across the river from the London Riverside OA. The ES addresses the potential air quality impacts on these Opportunity Areas in Chapter 7 of the ES, Table 7.9, where key consultation responses are provided. Whilst this response addresses the potential impacts on annual mean concentrations at ground level, it fails to address potential impacts at new high buildings in these areas, and specifically with regard to the short-term (1 hour mean) criteria, which can be substantially higher at elevated receptors where the emissions are released from a tall stack. It is therefore potentially in conflict with draft London Plan Policy SD1.

3.122. The proposed development also lies within the Bexley Air Quality Management Area (AQMA) and will have impacts on the Havering AQMA. AQMAs are a statutory designation where the Borough Council has formally assessed that air quality is actually or at risk of being in breach of existing legal limits for NO2 and particulate matter and where action must be taken to remove these breaches. The ES shows that emissions from the proposed development would make exceedances of AQMA limits for NO2 worse in Rainham town centre and potentially delay compliance with AQMA limits in Havering.

3.123. The results of modelling the impacts at ecological sites are set out in section C.2.3 of Appendix C.2 of the ES. It is clear that a number of sites are experiencing NOx concentrations above the critical level, as well as nitrogen deposition above the critical load. At two SSSI sites, Inner Thames Marshes and Ingrebourne Marshes on the opposite side of the River Thames, the increases in NOx concentrations would be 2.75% and 2.12% respectively due to the REP (together with the RRRF and CSSI), which are above the threshold of 1% that is used to require further investigation. No further investigation is reported in Chapter 7 of the ES. This is probably because in paragraph 7.9.43 of Chapter 7 of the ES it is stated that "Whilst the PC is above the threshold for potential significance this reflects the annual mean NOx concentrations whereas the determining factor which could potentially affect habitats is the nutrient nitrogen deposition." This seems to be taken to allow the exceedances of the critical level to be ignored. It is wrong, however, to dismiss critical levels, as exposure to NOx concentrations can give rise to effects separate to those of nitrogen deposition, hence the critical level for exposure to NOx. This is made clear in section 6.3 of a report published by Natural England: Assessing the effects of small increments of atmospheric nitrogen deposition (above the critical load) on semi-natural habitats of conservation importance, Report NERC210, published in March 2016. NPS-EN1 sets out issues related to biodiversity and geological conservation in section 5.3. An assessment of the impacts of the additional NOx concentrations should be provided.

3.124. The extent of the modelled impacts on air quality means that many local residents would be affected by emissions from the plant. Increased air pollution is widely understood to have consequences for the long-term health of the individuals exposed. Given the extent of the impacts, (even when all possible mitigation measures, going beyond current best practice, have been taken into account in the modelling) the GLA believes that these negative effects of the development are significant enough to outweigh any predicted benefits of the development.

WR7 Construction Traffic Impacts

A – Construction Worker Traffic and Construction Delivery Traffic Impacts

3.125. As noted in TfL's Relevant Representations, it is considered that the Applicant has not sufficiently assessed the transport impacts of the construction associated with the proposed development. TfL and the GLA, on behalf of the Mayor of London, therefore object to the proposed development.

3.126. TfL considers the junction modelling contained within the ES to not be fully representative of the real capacities of the junctions assessed, as it is considered that the junctions are influenced by each other's performance given that they are closely linked. This is confirmed by the Applicant in paragraph 6.4.4 of the Transport Assessment, stating:

"The Applicant has engaged with TfL on this point and it has been recognised that the operation of the James Watt Way junction is influenced by the operation of the A206 / Bexley Road roundabout and adjacent A206/A220 junction."

3.127. Given the robust assessment of the traffic associated with the operational phase development as 100% of waste deliveries by road instead of the nominal 75% of waste delivered by river, this was not deemed a significant issue if a DCO Requirement to deliver the majority of waste via the river is secured. The proposed level of construction traffic generated by the site, however, would be likely to cause significant disruption to the junctions on the Strategic Road Network (SRN).

3.128. TfL's scrutiny of the modelling indicates that the Applicant's isolated junction modelling is not sufficient, especially as TfL notes that the queue survey has not adequately picked up the full queue length at some of the junctions. TfL has advised the Applicant to produce a VISSIM microsimulation model that includes a network containing the A2016 Eastern Way/Yarnton Way/Clydesdale Way roundabout, A2016 Picardy Manorway/Norman Road junction, A206 Picardy Manorway/A2016 Bronze Age Way/Anderson Way/B253 Picardy Manorway roundabout, and the Erith roundabout to capture any knock-on effects from delays at one junction to another and resolve this issue.

3.129. TfL has highlighted to the Applicant that Erith Roundabout, to the south of the site, currently experiences congestion and if its operation is sufficiently disrupted by REP construction traffic then the performance of other junctions could be affected, particularly given the lack of other routing options for traffic between Erith Roundabout and the Horse Roundabout (Bronze Age Way/Anderson Way/Picardy Manorway roundabout). TfL's London Highway Assignment Model (LoHAM) for the area where the site is located shows that traffic is likely to increase in the future and delays to the northern arm of Erith Roundabout are expected to increase as well. Therefore, TfL would expect a full assessment of construction traffic generated by the development to include its effect on the Erith Roundabout as well as the junctions modelling for the operational phase of the development.

3.130. The Applicant has provided an indicative construction worker vehicle trip generation based on the number of parking spaces provided on-site, currently proposed to be 552 parking spaces at the peak month of construction (month 13). It has been assumed that one parking space equates to one arrival and one departure trip per day (552 inbound and 552 outbound, resulting in 1,104 movements per day). However, the Applicant has not shown why this level of car parking at the site is necessary during the construction phase. Lower levels of parking would reduce the number of vehicle trips to the site and help to mitigate the impacts during the construction phase. TfL considers that the Applicant should provide the full rationale for the number of parking spaces required at the site and show all reasonable actions have been undertaken to reduce this level of parking. For the construction period the Applicant rightly focuses on the worst-case month 13, when the greatest impact is likely. However, it should also be noted that for more than a year during the construction period in excess of 150 inbound and 150 outbound construction worker vehicles are expected to access the REP site on a daily basis.

3.131. The Applicant has produced an outline Code of Construction Practice (COCP) which sets out the principles and requirements for the management of construction impacts with reference to relevant health and safety legislation as well as environmental standards for contractors, together with as an outline Construction Traffic Management Plan (CTMP) which sets out the expected number of vehicle movements, general traffic management proposals, and high-level potential mitigation of traffic impacts. TfL's key concern, in relation to the proposed mitigation, is the lack of detail on construction traffic impact offered by the Applicant and the lack of commitment to mitigation measures within the outline CTMP. Given the expected level of construction impact, the CTMP should commit to more measures. At a minimum these should include commitment to an electronic delivery booking system, and retiming for out of peak time deliveries.

3.132. There are inconsistencies between the CoCP and CTMP that need to be resolved. For example, the delivery booking system is committed to in the CoCP, but not in the outline CTMP. The final, detailed, versions of these documents, to be secured through the DCO, should align on the committed measures. The requirements securing these documents should be worded to state that TfL must be consulted on these documents and any reasonable suggestions that TfL may have on the drafts will be incorporated.

3.133. The Applicant has stated in 6.4.13 of the Transport chapter of the ES (document 6.1)that a fuller breakdown of the construction supply chain and associated vehicle trip origins would be provided through a detailed CTMP, the preparation of which would be secured as a requirement of the DCO. The potential impact of the supply chain as well as construction worker origins could significantly influence the traffic impact of the development's construction phase and a full modelling assessment should be provided to show that the construction traffic would not have a detrimental impact on the highway network. However, the Applicant's proposed draft CTMP DCO requirement does not specify the level of assessment that will be undertaken and shown in the CTMP. At this stage the Applicant has not provided any network modelling to show what the impact of the construction traffic would be on the SRN, which means that both the level of mitigation required and the details of how the Applicant would provide an assessment of what would be appropriate mitigation is unclear.

3.134. The Applicant has not undertaken sufficient modelling and TfL advises that it would need to undertake a modelling exercise to determine the capacity of the local network and assess the impact on the highway network. This will require a microsimulation modelling assessment of a network containing the A2016 Eastern Way/Yarnton Way/Clydesdale Way roundabout, A2016 Picardy Manorway/Norman Road junction, A2016 Picardy Manorway/A2016 Bronze Age Way/Anderson Way/B253 Picardy Manorway roundabout and the Erith roundabout to be undertaken to determine the maximum number of construction trips that can be accommodated on the network in the peak periods.

3.135. Based on this assessment, a DCO requirement should be included to ensure that there is sufficient mitigation in place to so that this level is not exceeded through committed measures set out in a CTMP, such as:

- construction worker shuttlebus services (stated as being considered in CTMP paragraph 9.7.6);

- a regulated lift share scheme for construction worker to reduce the number of people driving to the REP in a single occupancy vehicle;
- delivery booking system (committed to in CoCP 4.2.4, but not in the outline CTMP; paragraph 9.7.6 stating that it would be 'considered'); and
- provision of parking permits to construction workers to park on site only for those workers who 'need' to drive and link the assessment of who needs to drive to the justification of the total number of parking spaces required.

3.136. The mitigation should be agreed with the Local Highway Authority (LHA) in consultation with TfL and the DCO requirement should be signed off by the Local Planning Authority and TfL prior to commencement of construction.

3.137. The ES Transport Chapter paragraph 6.11.6 states that *"The outline CTMP comprises complementary elements of logistics planning but also incorporates the available information relating to how workforce traffic would be managed at each stage of construction, helping to minimise the impact of the construction period."* TfL generally agrees with the principle of the approach set out in the CoCP which requires CTMPs to be produced and agreed with the LHAs; however as construction traffic impact has not been sufficiently assessed, it is unclear how the impact of construction would be minimised. As stated previously, given the potential impact of construction on the SRN, TfL should be consulted by the LHA on these CTMPs.

<u>B – Electrical Connection Construction Impacts</u>

3.138. The impact of the Electrical Connection's construction has not been addressed through the TA or outline CTMP. It is understood that the final route has not been chosen by UKPN, however it is expected that the construction of the Electrical Connection, which the ES states would likely take up to two years, would require lane closures (of 300m sections for 7 days at a time) and potentially some road closures as well. The scale and scope of these works is currently unknown and therefore may or may not be acceptable. It is therefore also unclear if the impact of the Electrical Connection construction could be satisfactorily mitigated at all.

3.139. The ES Transport Chapter paragraph 6.11.7 states "The finalised and approved CTMPs would further review the implications of temporary lane closures and diversions of routes associated with the delivery of the Electrical Connection and include mitigation measures for the interaction with PRoWs."

3.140. However, the Applicant has not indicated how the impact of the Electrical Connection construction would be assessed. TfL considers that a form of modelling should be used to assess the impact of lane and road closures along the network to identify where the construction will have the most impact and how to mitigate against this impact.

3.141. Consistent with the impact of REP construction traffic, the Applicant has not sufficiently committed to specific mitigation of the Electrical Connection construction works.

Effect on bus services

3.142. In addition to impacts on general traffic flow on the highway network, the Applicant has not sufficiently assessed the potential effect of construction activity on buses.

3.143. ES Transport Chapter paragraph 6.9.67 states *"The severance effect to these bus services would vary from Minor adverse, where short lane closures and alternate way traffic signals are used, to potentially Major adverse if temporary road closures are required where no suitable alternative routeing is available for the affected bus services. The details of these impacts are not known currently and would be detailed as part of the CTMP, secured through the DCO."*

3.144. Potential Major adverse impacts to bus services would not be acceptable to TfL and the effects on the bus network should have been assessed prior to submission of an application.

3.145. If it would be necessary to make changes to existing bus routes during construction of the development, these changes would need to be agreed with TfL as it would require permits to run specific services to site and the diversion of routes could have an impact on the public transport accessibility of the local area. Any such agreed changes should be at no additional cost to TfL or bus operators and the impact to public transport would need to be minimised.

4. Conclusion

4.1. The GLA objects to the proposed REP, in particular the ERF, on the basis of the detailed evidence provided in this document with regard to energy, carbon, waste and the circular economy, waste transport, and air quality.

4.2. The GLA considers that the proposed REP is not in compliance with NPS EN-1 and NPS EN-3 in the following respects:

- it would not provide a low carbon energy generation facility that would contribute to reducing the UK's reliance on fossil fuels and the need to decarbonise the power sector in compliance with NPS EN-1 section 3.3 and 3.4;
- the application does not provide sufficient evidence that opportunities for CHP have been fully explored in compliance with NPS EN-3 paragraph 2.5.27;
- the REP would treat waste that could be re-used or recycled with less environmental impact and does not make any provision for pre-treatment to ensure that only truly residual waste is treated in the ERF. This is contrary to NPS EN-1 paragraph 3.4.3 which requires energy from waste generating stations to manage waste in accordance with the Waste Hierarchy;
- the REP would not be of an appropriate type and scale so as not to prejudice the achievement of local or national waste management targets in England as required by NPS EN-3 paragraph 2.5.70;

- the REP would conflict with the Mayor's waste policies in particular his position that there is no need for additional recovery capacity, taking into account existing capacity, in conflict with NPS EN-1 paragraphs 2.5.66 and 2.5.67; and

- the assessment of air quality impacts does not comply with section 5.2 of NPS-EN1 which says that air quality considerations will be important where substantial changes in air quality levels are expected, even if this does not lead to any breaches of national air quality limits.

4.3. Notwithstanding the REP's lack of compliance with the relevant NPSs, the GLA considers that the adverse effects of the development, in particular the ERF, would outweigh the purported benefits of the REP. In these circumstances the GLA's view is that, in accordance with section 104(7) PA 2008, the application should not be decided in accordance with the NPSs. The adverse effects are set out in detail in this document and include the following:

- there is insufficient heat demand within a reasonable catchment area to utilise heat from both the RRRF and the proposed ERF; consequently, the proposed ERF is unlikely to become a low carbon generator, thereby undermining key carbon reduction policies;

- lack of any proposals for pre-treatment of waste thereby undermining the achievement of re-use and recycling targets and carbon reduction targets including the Mayor's target of 65% recycling by 2030 and the national target of 65% recycling by 2035 and the Mayor's target of zero carbon for London by 2050;

- provision of excess waste recovery capacity that exceeds demand thereby leading to oversupply and a consequential effect on treatment prices that is likely to undermine the recycling and carbon reduction targets, and affecting the movement of waste management up the waste hierarchy;

- insufficient consideration of the capacity and environmental effects associated with the riparian transfer stations that are proposed to be used for transfer of waste by river to the ERF;

- air quality impacts on vulnerable receptors and increasing levels of emissions that would delay the ability of London boroughs to comply with national air quality standards and improvement plans; and

- adverse effects of construction traffic on the SRN and bus services have not been adequately assessed and may not be capable of mitigation.

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Appendix 1 – Eunomia Analysis of REP CIF performance

Appendix 2 – Bexley District Heat Feasibility Study Work Package