

**NORTH LONDON WASTE AUTHORITY**

**REPORT TITLE:**

NORTH LONDON HEAT AND POWER PROJECT - DEVELOPMENT CONSENT ORDER UPDATE AND NEXT STEPS

**REPORT OF:**

HEAD OF LEGAL AND GOVERNANCE

**FOR SUBMISSION TO:**

AUTHORITY MEETING

**DATE:**

5 April 2017

**SUMMARY OF REPORT:**

The report provides an update on the Development Consent Order (DCO) application for the North London Heat and Power Project (NLHPP) and includes confirmation that the Secretary of State has issued his decision and that the DCO has been granted. A detailed review of the changes made during the decision making process has been carried out and is covered in this report. The report also informs of the next steps to be taken, including the finalisation of compulsory acquisition of interests as set out in the DCO, and the need for best value consultation on the delivery of the scheme before decisions on implementation are taken. The report sets out next steps to be taken following the granting of the DCO and recommends the creation of a Member Project Steering Group to allow for more detailed consideration of the issues arising in implementation of the NLHPP Scheme.

**RECOMMENDATIONS:**

The Authority is recommended to:

1. note the decision of the Secretary of State to grant the Development Consent Order for a replacement Energy Recovery Facility at the Edmonton EcoPark with associated development;
2. note the next steps in preparing for implementation of the Development Consent Order, subject to further decisions by the Authority, as set out in section 3 of this report;
3. agree the establishment of a Member Project Steering Group with the terms of reference and membership as set out in section 4 of this report;
4. note that consultation will be required before final decisions are taken on implementing the Development Consent Order.

**SIGNED:** ..... Head of Legal and Governance

**DATE:** 24 March 2017

## **1 INTRODUCTION**

- 1.1 In October 2015 the Authority made an application to the Secretary of State for a Development Consent Order (DCO) for a replacement Energy Recovery Facility, with associated development, on the Edmonton EcoPark, the project known as the North London Heat and Power project (NLHPP).. This report informs Members of the outcome of the Authority's application following the decision by the Secretary of State It provides an update on next steps with regard to the delivery of the DCO, and seeks agreement to the approach to consultation in accordance with the Authority's best value duty.
- 1.2 The report contains one appendix which is referred to in section 5 below: Appendix A – Options work summary report

## **2 DEVELOPMENT CONSENT ORDER DECISION**

- 2.1 The Secretary of State for Business, Energy and Industrial Strategy provided his decision on the DCO application on 24 February 2017, in accordance with the required statutory timescale. He granted the DCO, and the approved version is available through the website of the Planning Inspectorate: [infrastructure.planninginspectorate.gov.uk/projects/london/north-london-heat-and-power-project/?ipcsection=relreps&relrep=14](https://infrastructure.planninginspectorate.gov.uk/projects/london/north-london-heat-and-power-project/?ipcsection=relreps&relrep=14) together with the decision letter which includes his statement of reasons, and the Examining Authority's report which recommended granting the DCO. The DCO is called "the North London Heat and Power Generating Station Order" reflecting the fact that the energy recovery facility, designed to meet the Authority's statutory function of disposal of waste, had to be authorised through a process for approval of facilities generating energy above a level of 50 megawatts of electricity.
- 2.2 In accordance with the statutory procedure a written request has been submitted to the Secretary of State seeking correction of four points, either to correct typographical errors or to return the wording to that included in the draft DCO submitted by the Authority at the end of the examination period. Officers have reviewed the DCO, and subject to those corrections being made, concluded that it is in a satisfactory form to implement the scheme proposed. If the corrections are not made, there will be a lack of clarity on the specific points raised within the drafting of the the DCO, but the scheme can still be implemented and the Authority will be able to manage its waste through the new ERF facility.
- 2.3 As required by the statutory process, notices have been put up informing all those with an interest in land or an interest that may be affected that the DCO has been granted, and a statutory notice has been placed in the Enfield Independent. Letters of notification have been sent to all relevant parties. The next step will be to issue the statutory notices required to finalise compulsory acquisition where we do not have a separate agreement in place..

2.4 Notification by newsletter has been sent to all Authority Members and to Ward Members within the vicinity of the EcoPark, and a leaflet has been sent to residents and businesses in the vicinity of the EcoPark and those who have asked to be kept up to date with the project.

### 3 NEXT STEPS

3.1 During the course of 2017, the Authority will consider the appropriate contracting structure and procurement strategy for implementation of the DCO, and in doing so will develop the cost and risk work undertaken during 2016. Implementation will be based on the timeline set out in the DCO application, which underpins the DCO as granted. That timeline is:

	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Stage 1a (Site prep and enabling works)	■									
Stage 1b (Construction of RRF, EcoPark House)		■	■							
BWRF/FPP Transition			■							
Stage 1c (Demolition of northern area)			■	■						
Stage 1d (Construction of ERF)				■	■	■				
Stage 2 (Transition stage)							■	■	■	■
ERF full operations								■	■	■
Stage 3 (EfW decommissioning and demolition)								■	■	■

3.2 More detailed timetables, which incorporate appropriate timescales for site investigation, contract scoping and procurement as well as construction periods are being prepared, and can be considered together with the potential contracting structures to inform decision making. As part of that more detailed work, consideration can be given to a later decision on the procurement strategy for the ERF itself, perhaps in mid-2018, which would allow for a longer period for consideration of the most appropriate strategy and for the consultation referred to below without compromising the programme.

3.3 The Authority appointed external advisers to assist on the DCO and associated decision making during 2016. Those contracts now need to be refreshed to cover the implementation phase, and it is proposed to scope and advertise for technical and financial consultants towards the end of 2017. Further details will be brought forward for Member approval when the range of work required is better defined, in conjunction with decisions on the delivery of the NLHPP.

3.4 During the preparation for the DCO Application, Grimshaw provided architectural advice and input into the application documents, in particular the Design and Access Statement, which included the external design elements of the ERF and the coherent approach to design and to wayfinding across the buildings on the EcoPark. This work will need to be progressed to allow for scoping of construction contracts to ensure consistency of design. It will be necessary for the Authority to procure architectural services for this concept architectural work, and also for architect services relating to any architectural design elements of the construction which it retains, and authority for this will be sought at a future meeting.

## **4 PROJECT GOVERNANCE**

- 4.1 During the current year the Authority will be considering the detail of the implementation of the North London Heat and Power Project, now that the DCO has been granted. In parallel with this, in order to meet the timescales set out in the DCO, preparatory work is being carried out with regard to the on-site utilities, and detailed work is taking place on the procurement and construction programme for the DCO Scheme. To facilitate Member and borough understanding of the development of the project, and to inform decision making in Authority meetings, it is proposed to set up a working group to be called the Member Project Steering Group. The membership will be: one Member from each borough to include the Chair and the Vice Chairs; NLWA officers; and senior officers from the Constituent Boroughs, to include the chair or co-chairs of the Partnership Board (which has the role of overseeing and managing liaison between the Authority and the Constituent Boroughs on matters relating to project activity, of which the principal one is the NLHPP).
- 4.2 The remit of Member Project Steering Group will be to consider and discuss the programme for implementation of the NLHPP, and the procurement strategy. Once decisions are made on the delivery mode, the Member Project Steering Group will consider and discuss the activities of the project implementation team, and it is therefore currently envisaged to remain in place for the duration of the implementation project. The structure of the internal officer project team will be determined by the Authority following decisions on delivery, and is currently programmed for consideration at the December 2017 Authority meeting.
- 4.3 The Member/Officer Steering Group was initially established as a mechanism for briefing Members informally regarding a variety of issues affecting the Authority, in particular project related issues. It is expected that the new Member Project Steering Group will replace the MOSG, and that while it will consider principally the NLHPP, other Authority project matters can be included in the agenda when they arise.

## **5 CONSULTATION**

- 5.1 During 2016 the Authority considered options relating to future delivery of residual waste services with a view to establishing whether the implementation of the DCO scheme represented the optimum solution for north London. Specifically, the Authority considered whether the existing EfW could be used for a longer period; whether any use could be made of the materials within the existing EfW; and whether a solution not based on the EcoPark (PPP for a new build facility outside London or a wholly merchant market solution) represented better value.
- 5.2 The options were considered on the basis of technological solution and cost, with account being taken of relative risks and opportunities, and of environmental impact. That work is summarised in a report which is set out in Appendix A to this report. As a result of this work, the Authority determined in December 2016 to pursue the Development Consent Order (DCO), subject to the terms of the DCO being satisfactory once the decision by the Secretary of State had been received and reviewed.

5.3 Prior to submission of the DCO application, the technical and environmental substance of the application was subject to extensive consultation, and the DCO examination process allowed for further comment to be made by interested parties and, through open floor sessions, the public. Comments received during the process were taken into account by the Authority in finalising its application, and by the Examining Authority in preparing his report on the DCO Application. The outcomes are available in the Consultation Report and the Report of the Examining Authority available through the website of the Planning Inspectorate at

[infrastructure.planninginspectorate.gov.uk/projects/london/north-london-heat-and-power-project/?ipcsection=docs](https://infrastructure.planninginspectorate.gov.uk/projects/london/north-london-heat-and-power-project/?ipcsection=docs).

5.4 In addition to consultation that took place during the DCO process on the technical and environmental aspects of the application, the Authority is also under a statutory duty to consult on how its functions are exercised, since as a best value authority it has the duty to “make arrangements to secure continuous improvement in the way in which its functions are exercised, in terms of economy, efficiency and effectiveness”. In deciding how to fulfil that duty, it must consult certain representatives. To meet this requirement, it is proposed to consult formally with the Constituent Boroughs and with representatives of local businesses and interested groups, and to provide notification of the consultation through the NLWA corporate and project websites and borough websites.

5.5 The proposed consultation is not intended to revisit issues consulted on in the DCO pre-application stage, which covered the technology solution, the environmental assessment of the Scheme, the need for the Scheme, and alternatives that had been considered prior to preparing the application. The timeline for the project was also included in the consultation documentation. Relevant documents can all be seen on [northlondonheatandpower.london](http://northlondonheatandpower.london). The forthcoming consultation will rather cover how the Authority’s statutory waste disposal functions are carried out, including whether to maintain a public sector delivery, as now, or to move to private sector delivery. These issues were not covered in the previous consultation but they are matters on which strategic and detailed decisions remain to be made during 2017 and potentially into 2018. The scope of the consultation will be developed as the Authority considers its options for delivery further, and further proposals on the timing and content of such consultation will be brought to Members at future meetings of the Authority, and in time for consultation to take place and for the outcome to be taken into account in making decisions on delivery.

## **6 COMMENTS OF THE CLERK**

6.1 Members will be aware that we had attempted to recruit to the vacant post of the Authority’s Managing Director in late 2016. We had necessarily advertised the role earlier but at a time when the NLWA’s own strategy had not been confirmed and the decision on the DCO had not been made. The Authority confirmed its strategy in the December 2016 meeting and we now have the DCO decision. Now that these key strategic points have been confirmed, in consultation with the Chair, we are now

progressing to implement the Authority's previous decision to recruit to the vacant Managing Director role, culminating in a Member final interview panel with a chance for all Members to meet candidates, as previously agreed. In short we are expecting that the greater certainty will enhance our ability to recruit to the role.

- 6.2 The Managing Director role will play a crucial role in leading the work of the Authority and in overseeing the delivery of the Authority's strategies. A vital element of the job is to understand the requirements and direction of elected Members and also ensure effective partnership working between the boroughs and the Authority. This means we will need someone who is skilled in leading in a complex, collaborative way and is able to build and maintain successful partnerships, is experienced in supporting elected politicians, and is commercially astute, with a background in waste management.
- 6.3 At the same time it is advised that the Authority will need a skilled and dedicated Project Director to lead what will be a highly complex procurement and construction delivery programme, over many years, that will have many risks that need to be managed. It is likely that in a project of this scale external advice and support will also be required, but an in house Programme Director to protect the NLWA's interests will be vital. The expectations and requirements of this role are likely to change as the programme of work goes through different phases which will need different capabilities. It is proposed to return to the recruitment to this role after the MD has been appointed.

## **7 COMMENTS OF THE LEGAL ADVISER**

- 7.1 The Development Consent Order "North London Heat and Power Generating Station Order 2017" came into force on 18 March 2017, and the six week period for judicial review expires on 8 April 2017.
- 7.2 The Authority has decided to pursue the development of North London Heat and Power Project (NLHPP), if the development consent order is granted on acceptable terms. As the Authority begins to consider the best approach to implementing NLHPP, it is starting to review the way in which its waste disposal function could be exercised through the implementation period. This involves a strategic decision as to whether its function should continue to be exercised in house or via a partnership with the private sector.
- 7.3 The Authority is under a statutory duty of best value under Local Government Act 1999, section 3(1) to "make arrangements to secure continuous improvement in the way in which its functions are exercised, having regard to a combination of economy, efficiency and effectiveness."

## **8 COMMENTS OF THE FINANCIAL ADVISER**

- 8.1 The Financial adviser have been consulted in the drafting of this report and has no further comments.

**Local Government Act 1972 - Access to Information**

**Documents used:** Development Consent Order and Application Documents; Decision letter.

Available through [infrastructure.planninginspectorate.gov.uk/projects/london/north-london-heat-and-power-project/?ipcsection=docs](https://infrastructure.planninginspectorate.gov.uk/projects/london/north-london-heat-and-power-project/?ipcsection=docs).

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**REPORT ENDS**

## **APPENDIX A**

### **NORTH LONDON HEAT AND POWER PROJECT SUMMARY PAPER ON OPTIONS REFERRED TO IN PARAGRAPH 5.2**

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# **1 Introduction**

- 1.1 This paper provides a detailed summary of the work undertaken by North London Waste Authority (NLWA or the Authority) in 2016, in parallel with the process for examination of the application for a Development Consent Order (DCO), to examine options for the delivery of future residual waste management services and determine whether, as previously assessed and set out in the DCO application, the scheme for which the DCO application had been made, namely a replacement Energy Recovery Facility (ERF) on the Edmonton EcoPark with associated development (the DCO Scheme), was the option for NLWA to progress. A Glossary of Waste Management Terms can be found in Appendix A5.

# **2 Background to NLWA and the residual waste service provision in north London**

- 2.1 NLWA is a statutory joint waste disposal authority established in 1986, and its principal responsibility is for the management and disposal of waste collected by the seven constituent boroughs of Barnet, Camden, Enfield, Hackney, Haringey, Islington and Waltham Forest (the Constituent Boroughs). NLWA is funded largely by a statutory levy which is paid by the Constituent Boroughs on a basis which is agreed between them through an inter-Authority agreement.
- 2.2 The Constituent Boroughs deliver residual waste collected by them to designated points within the north London area as directed by NLWA. The future arrangements for management of residual waste are therefore of direct interest to the Constituent Boroughs through an obligation to pay for the NLWA service and through the relationship between the NLWA functions and the waste collection functions of the Constituent Boroughs. The relevant costs relate to residual waste management and are apportioned through the agreed Menu Pricing mechanism in the inter-Authority agreement, effective from 1 April 2016.
- 2.3 The Energy from Waste (EfW) facility at the Edmonton EcoPark has been in use since 1970 when it was commissioned. The current arrangements allow for ongoing use of the existing EfW facility until 2025, and a waste management contract is in place with LondonWaste Ltd (LWL) until that time. This arrangement arises from Authority decisions in 2013 which, following the end of the long term procurement, took account of the options work carried out earlier in that year which indicated that the cheapest solution, if planning permission were a realistic prospect, was to build an energy recovery plant on the EcoPark. The decision was therefore made that the use of the EfW facility should continue for longer than previously planned with an associated contract to LWL (entered into in December 2014 at the end of the previous contract), and that the necessary planning applications should be made to allow for a replacement EfW facility on the EcoPark (carried out through the DCO application).
- 2.4 In October 2015 NLWA submitted an application for a DCO to the Planning Inspectorate. The scope of the application, the documentation and the consultation carried out are all available through the project website, [northlondonheatandpower.london](http://northlondonheatandpower.london).
- 2.5 The application progressed through the statutory stages, with examination taking place between 25 February 2016 and 24 August 2016. NLWA was notified on 24 February 2017

that the Secretary of State for Business, Energy and Industrial Strategy had reached a decision to make the DCO. The decision and all papers relating to the application are available through the website for nationally significant infrastructure, <https://infrastructure.planninginspectorate.gov.uk/projects/london/north-london-heat-and-power-project/?ipcsection=overview>.

### 3 Options Assessment

3.1 In November 2015, in preparation for receipt of the decision on the DCO application, NLWA initiated an options exercise to establish whether the DCO scheme continued to represent value for money. The work led to a report to the NLWA Authority meeting on 7 December 2016, the content of which is summarised in this paper.

3.2 The Authority agreed the list of options to be considered for the management of residual waste received by it, with most of the options proposed involving the continued use of the Edmonton EcoPark as that site is a protected waste site of sufficient size for a residual waste treatment facility. The factors which were considered as part of the options appraisal were as follows:

- The assessed cost of each option, calculated on a net present value (NPV) basis. The outcomes of this are in section 6 of this paper.
- The risks and benefits associated with each option, which were collated into a Strengths, Weaknesses, Opportunities and Threats (SWOT) matrix, the output of which is in Appendix A2.
- The timelines assumed for each option are contained in Appendix A4

In carrying out this options exercise, the Authority received advice from its external advisers, namely:

- Ramboll (Thermal technology)
- Amec Foster Wheeler (Non-thermal technology)
- Arup (Planning)
- Stephenson Harwood (Legal)
- PriceWaterhouse Coopers (Financial)

3.3 Based on the options appraisal, the Authority determined to implement the DCO should it be granted without unacceptable conditions or requirements. This decision was based on a review of the risks associated with the delivery of each of the options and their associated cost.

### 4 Options Descriptions

4.1 The options for the management of residual waste assessed for the options exercise are described in the table below.

Option Number	Option Name
1	Extend Use of Existing EfW Facility

Option Number	Option Name
	(5 year extension of use to 2030 followed by implementation of the DCO Scheme); the capacity for this plant would be limited to 550,000 tonnes per annum because of constraints arising from the age of the facility.
2	Rebuild existing Energy from Waste Facility (EfW) from Within
2-2	Rebuild EfW from Within with Additional Line to allow for the remaining forecast tonnage up to 700,000 tonnes per annum.
3	Build at the EcoPark (the DCO Scheme)
4	Merchant Facility(ies) Outside London
5	Public Private Partnership (Energy Recovery Facility Outside London)

- 4.2 The options for treatment of waste are (a) landfill, or (b) thermal treatment with or without pre-treatment. The latter technology leads to the production of energy which can be used as electricity, either locally by private wire or through export to the national grid, or, through the production of hot water or steam, for local heating networks. Some thermal treatment technologies require a refined fuel, involving sorting, drying and shredding of the black bag waste. This step can be of benefit in reducing the volume of waste which requires transport; and is also essential for regulatory reasons if the end treatment destination of the waste is outside the UK. The cost associated with this additional pre-treatment is not outweighed by the reduction in final treatment cost or any additional recyclate recovered from the residual waste stream. Landfill is not a preferred option in the UK for reasons of environmental impact, which is reflected in national policy, giving rise to an unfavourable planning policy framework for any applications for development of new sites. In addition, the level of tax set on a per tonne basis means that the total cost of landfill is and is likely to remain higher than other treatment methods. As a result, there is a lack of new landfill capacity/sites across the UK.
- 4.3 The selection of options for consideration took into account the availability of the EcoPark site for the carrying out of NLWA's principal function, and the planning policy framework relating to the EcoPark site. This planning framework, following the adoption of the LB Enfield supplementary planning document for the EcoPark site in May 2013 and the adoption of the GLA Upper Lee Valley Opportunity Area Framework in July 2013, was, and remains, supportive of energy recovery from waste. These changes in planning policy had led to the NLWA decision in December 2013 that an appropriate planning application could be progressed for an ERF at the EcoPark and that this was likely to provide a significantly cheaper residual waste treatment cost than the previous procurement strategy.
- 4.4 Option 1 allows for consideration of a further extension of the use of the existing EfW, to 2030. Prior to December 2013, the procurement strategy was aimed at replacement of the facility by 2020. Arising from decisions in September 2013 relating to the procurement exercise at the time ([nlwa.gov.uk/news/2013/2013/09/27/north-london-waste-authority-decides-to-end-procurement-process](http://nlwa.gov.uk/news/2013/2013/09/27/north-london-waste-authority-decides-to-end-procurement-process)), an extension to the contract with LWL to 2025 was put in place to allow time to decide on and arrange an alternative strategy for future waste treatment, and to address risks relating to the extended use of the existing EfW, with mitigation proposals through capital works to the plant. In considering a further extension

of the use of the EfW, the risks and costs associated with an extension to 2030 were reviewed and formed part of the assessment of the viability of this proposal. Option 1 assumed that Option 3 (Build the DCO Scheme) would follow that five year extension of use of the existing EfW, with the new ERF commissioned and operating in 2030 rather than 2025. There are risks to the implementation of the DCO associated with a full five year extension of the programme (see section 5 of this paper).

- 4.5 Option 2 explored the possibility that there was some value in the existing EfW which could be used to reduce the cost of a new ERF. A sub-option, 2-2, took this proposal and added a further line, to allow treatment of all of the Authority's forecast residual waste.
- 4.6 The options all started from the premise explained above that thermal treatment is the only viable end treatment method for significant volumes of waste. Options 4 and 5 were the options which assumed that there would be no final treatment solution on the EcoPark. Option 4 provided a solution through the merchant facility market; it assumed that there would be existing facilities with capacity to which the waste could be sent, and that these facilities may have been outside the UK, with an assumed requirement for a level of pre-treatment prior to transport. As there was no purpose-built facility in this option, the assumption was that several contracts would be required to allow all of the waste to be treated, and up to 10 contracts for approximately 50,000 tonnes each could be required to manage the total volume of waste arising. Contracts in this market (other than very short term contracts to cover repair work, or unexpected difficulties with the main facility) tend to be for a period of up to about 10 years. 10 years was assumed so as not to create more procurement points (with associated additional cost) within the assessment period than was reasonable. The cost of the option was based on gate fee plus transport costs and some pre-treatment.
- 4.7 Option 5 (Public Private Partnership) also required provision of a facility in a site outside London. The assumption here was that this facility would be purpose-built for the requirements of NLWA, and that there would be a 25-30 year contract (30 years in the financial model, again to prevent additional procurement points with associated costs). This option assumed a procurement at the start of the assessment period, and, since two contracts would have been required to cover the entire assessment period, a further procurement process halfway through the assessment period. The capital costs of the facility were comparable with those for the facility for which the DCO application was made.
- 4.8 The assessment period for the options reflected a reasonable view of the life of a new ERF, and is longer than the typical design life for such a facility, to take account of experience with the existing EfW plant.
- 4.9 The elements of analysis were:
- technical assessments;
  - a financial assessment; and
  - a SWOT analysis incorporating risk identification.
- 4.10 The sections that follow detail how these elements were approached and their outcomes.

## **5 Technical and Planning Assessments**

- 5.1 The Authority's technical advisers assessed the condition of the existing EfW facility, the viability of the technologies available for thermal treatment of waste, the availability and cost of market capacity for waste treatment and other aspects of the options.

### **Condition of Existing EfW**

- 5.2 The updated position on the existing EfW was:
- 5.2.1 The plant was being well operated and maintained.
  - 5.2.2 Risks of partial or complete failure will increase as the plant becomes older. It was noted that the plant is the oldest known operating in the UK.
  - 5.2.3 Regulatory risk (the ability of the plant to operate under current/future regulations from the Environment Agency) would increase with time. Works with a cost of up to £126.25m could be required if the regulations relating to emissions changed such that the EfW was no longer able to meet emissions requirements, or if the current Environment Agency derogation under which the plant operates were to be revoked.
  - 5.2.4 Despite good maintenance, it would not be cost effective to use elements of the existing plant to construct a replacement, and there would be risks associated with elements which could not be fully checked without intrusive survey, e.g. the bunkers.
- 5.3 The Authority decided in September 2016 not to pursue Option 2, which considered building a new facility 'from within' making use of some of the fabric of the existing plant, or its sub-option 2-2, which considered the same with the addition of a second smaller plant ('additional line') so that the plant would be of sufficient size to manage all of the Authority's residual waste requirement.
- 5.4 The advice was used in assessing the risks associated with ongoing use of the existing EfW facility, and any extended use as proposed under Option 1.

### **Thermal Treatment Technologies**

- 5.5 Ramboll also updated their advice on appropriate technologies for treatment of residual waste at the volumes collected by the Constituent Boroughs for treatment by NLWA. This confirmed that the only proven and sufficiently robust technology at this scale is advanced moving grate energy from waste technology.

### **Market Assessment**

- 5.6 Advice on the merchant market for residual waste, including the cost and availability of facilities in the UK and abroad for treatment of residual waste was considered. The cost figure was used in the financial model, and the assessment of availability was incorporated into risk assessments.

### **Environmental Permit Deliverability**

- 5.7 The deliverability of an environmental permit for all options was considered. Option 3 (Build the DCO Scheme) was found to be the least risky as the application was already well advanced (the Authority subsequently received a draft environmental permit on 17 February 2017). However, because of the options assumption that both Option 4

(Merchant Market) and Option 5 (Public Private Partnership) were assumed to have planning and permitting in place for the purposes of the options assessment, they were also not high risk. The likelihood for this in the case of Option 5, which would probably have been delivered through a purpose-built facility, was taken into account in the SWOT analysis described in section 7 of this paper.

- 5.8 As noted above, there were permit risks associated with Option 1 (Extend Use of the Existing EfW Facility) arising from the possibility of changes in regulation relating to energy from waste facilities.

### **Socio-Environmental-Economic Appraisal**

- 5.9 A high level assessment of the environmental and social performance of the various options was considered. The overall purpose of the assessment was to enable account to be taken of differential environmental, social and economic impacts between the options. The assessment carried out was high level, based on professional judgement. The criteria used were derived from the London Plan, supplemented by the North London Waste Plan, and considered with regard to each option. A table setting out the criteria and outcomes of the assessment is in Appendix A3.

- 5.10 No overall score was provided, as this would have required an additional layer of subjective decision on weightings. However, it is clear from the output table that both Option 1 (Extend Use of the Existing Facility followed by DCO scheme) and Option 3 (Build the DCO Scheme) scored well, and Options 4 (Merchant Market) and 5 (Public Private Partnership) scored less well. This was in part due to the fact that the assessment was undertaken on a London centric basis, as the applicable policies are London related policies, and the export of waste does not allow the local area to accrue the potential social, environmental and economic benefits from its treatment. Local air quality as an indicator scores favourably for Options 4 (Merchant Markets) and 5 (PPP), as the air quality issues would have been exported from London; however, this would be neutralised in a location specific assessment of any solution relating to an out of London facility.

### **Planning**

- 5.11 As the application for a DCO for a new ERF at the EcoPark had been made, this option provided the greatest certainty when set against unknown sites and policy frameworks. There are risks to the implementation of the DCO associated with longer use of the existing EfW facility, in particular if the timescale for implementing the DCO is not met or the programme set out is not met to a significant extent, with the resulting need to review and possibly vary the DCO. These were incorporated into the SWOT Analysis described in section 7 of this paper.

## **6 Financial Assessment Outcomes**

- 6.1 The financial model provided analysis of the agreed options, in order to demonstrate the key commercial and financial differences between each option and describe how this translates to a net present value of the possible future cashflows of each option. The model which set out the various costs and revenues associated with each option, based on the Authority's 2016/17 budget and taking account of the operating costs and LWL's known maintenance expenditure. Future costs and cash flows directly relating to the options were provided by the Authority's technical advisers and financing assumptions were sourced by PwC. The building blocks of the financial model are contained in Appendix A1.

6.2 The capital construction costs (at current prices and therefore excluding inflation) for each option are summarised in the following table.

Capital Construction Costs	ERF (£million)	RRF and other site works (£million)	Decommissioning (£million)	Total (£million)
Options 1, 3 and 5	515	96	16	627
Option 4	-	96	16	112

6.3 The outcome of the financial modelling work, shown in the following table, was a ranking by NPV. This provides a whole solution cost, and therefore is the basis for the financial element of the decision on the preferred option. Option 3 is shown to be the cheapest.

	NPV i - from 1 April 2016 to 31 March 2065 (£m)	Ranking (1=least expensive)	NPV ii - from 1 April 2016 to 31 March 2080 (£m)
Option 1a	1,020	2	1,066
Option 1b	1,129	4	1,238
Option 3a	980	1	1,016
Option 3b	1,093	3	1,130
Option 4	1,663	6	1,839
Option 5	1,415	5	1,555

6.4 Consideration was given to the timing of implementation of Option 3, taking into account (a) use of the DCO; (b) retaining the ability to use the laydown area throughout the construction and demolition period (as agreed with Thames Water); (c) limiting, as far as possible, capital spend on the existing EfW; (d) getting two more years of use of the EfW at the lower cost base; and (e) allowing more time for effective delivery. The figures are shown in the following table.

Option	Full operations date	Npv
Option 3a	2025	£980m
Option 3b	2025	£1,093m
Option 3a	2027	£990m
Option 3b	2027	£1,101m

Financial sensitivities were applied to the model relating to the costs of haulage and assumed gate fees, and also different exchange rates and loan rate. The sensitivities were selected with regard to assumptions which could, if different, give rise to a significant difference in overall cost. The conclusion was that none of these sensitivities affected the order of the options.

6.5 A sensitivity to show a two year delay to Option 3 (Build the DCO Scheme) showed that there would be a modelled increase in the NPV of the option, but the relative positions did not change, with Option 3a (DCO Scheme with public delivery method) and Option 3b (DCO Scheme with private delivery method) remaining respectively at a lower NPV than

Options 1a and 1b (extended use of the existing EfW followed by the DCO Scheme, with public and private delivery respectively).

## 7 SWOT Analysis

- 7.1 The agreed basis for a decision on the options was to decide on a preferred option which had the lowest cost at an acceptable level of risk. Risk was considered through a table of Strengths, Weaknesses, Opportunities and Threats. The outcome of that work is detailed in Appendix A2 of this paper.
- 7.2 The SWOT analysis was supported by the identification of risks for each option, to indicate the nature of the risks associated with that option. Detailed risk registers will be prepared for the delivery stage of the selected option.
- 7.3 In order to determine a preferred Option under the SWOT analysis a rating system was developed and used to score each option. A bespoke rating system was developed by external advisers (Amec Foster Wheeler) and NLWA officers as there is no standard methodology for SWOT scoring.
- 7.4 The ranking system applied was selected as it provided an equal balance between positive and negative rankings ranging from high, medium and low positive impact to high, medium and low adverse impact. A score was applied to each ranking such that a neutral scoring system was maintained, for example, a score of 2 was applied to a high positive ranking while a score of -2 was applied to a high adverse ranking so overall the impact was neutral. The issues identified under each option were ranked in terms of its impact by external advisers and NLWA officers and the overall score was obtained by adding up the rankings applied. Scores were not applied to any identified issues already covered in the financial model in order to avoid double counting.
- 7.5 A summarised outcome from the SWOT analysis is set out in the table below.

COST	RISK
<p><b>Option 3 – main factors</b></p> <ul style="list-style-type: none"> <li>• On EcoPark – no transport</li> <li>• Public or private delivery</li> </ul> <p><b>Option 1 – main factors</b></p> <ul style="list-style-type: none"> <li>• On EcoPark – no transport</li> <li>• Funding delay</li> <li>• Additional capex</li> </ul>	<p><b>Option 3 – main factors</b></p> <ul style="list-style-type: none"> <li>• Planning and permitting advanced</li> <li>• Construction and procurement risks common to Options 1 and 5 also</li> </ul> <p><b>Option 4 – main factors</b></p> <ul style="list-style-type: none"> <li>• Regulatory risks relating to export of waste</li> <li>• Loss of EcoPark to waste use</li> <li>• No access to third party income</li> <li>• Frequent exposure to market prices/availability</li> </ul>

COST		RISK	
<p><b>Option 5 – main factors</b></p> <ul style="list-style-type: none"> <li>• Transport and transfer</li> <li>• Non-owned site</li> <li>• Private sector able to respond with reasonable certainty on timescale</li> </ul>	<p><b>Option 1 – main factors</b></p> <ul style="list-style-type: none"> <li>• Increasing likelihood of catastrophic failure of plant</li> <li>• Increasing likelihood of partial plant failure</li> <li>• Regulatory risks increase with time</li> </ul>		
<p><b>Option 4 – main factors</b></p> <ul style="list-style-type: none"> <li>• Transport and transfer</li> <li>• Non-owned site</li> <li>• Multiple procurements</li> </ul>	<p><b>Option 5 – main factors</b></p> <ul style="list-style-type: none"> <li>• Construction risks</li> <li>• Limited flexibility, e.g. if higher recycling</li> <li>• Planning application may be needed</li> <li>• Waste transport impacts</li> </ul>		

7.6 As a result, the preferred option was Option 3, to build a new ERF in accordance with the DCO Scheme.

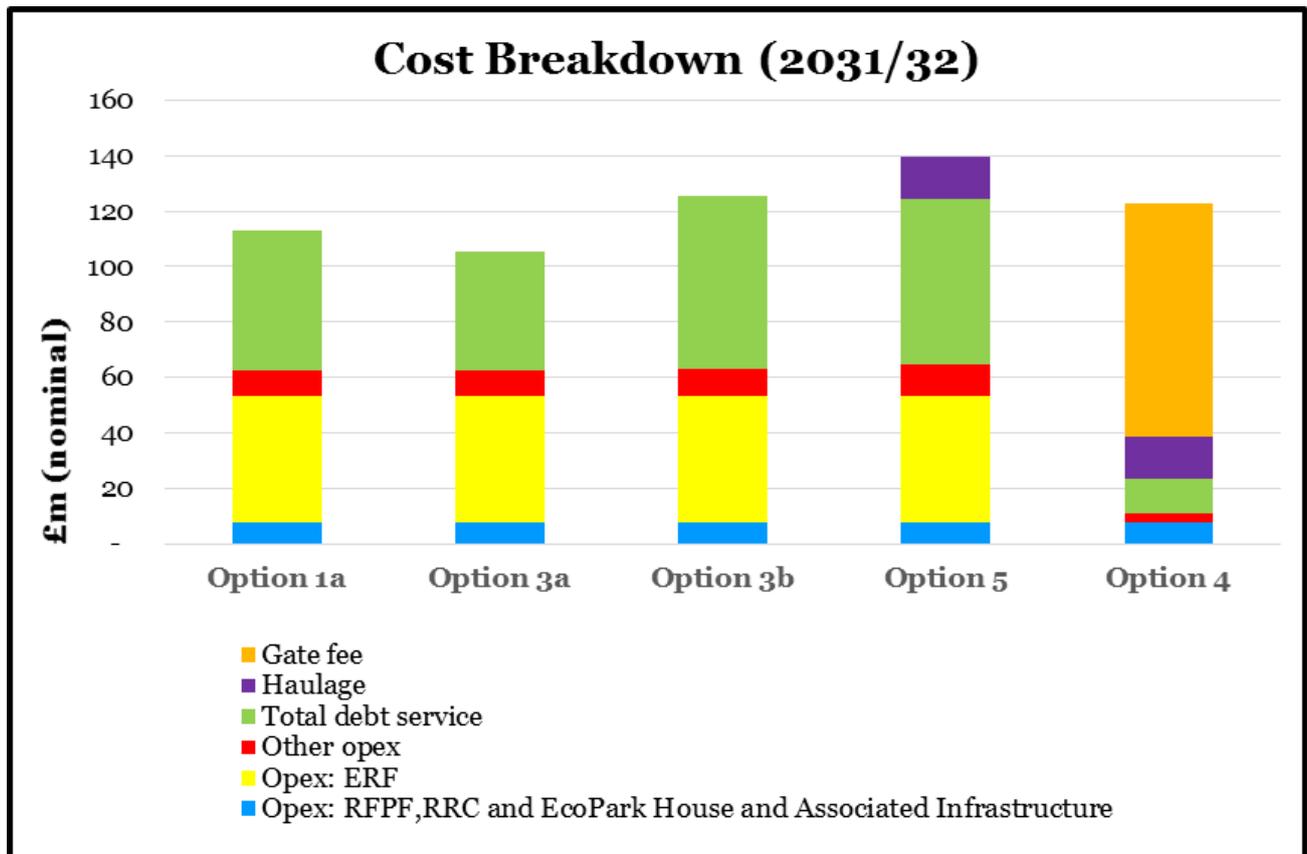
## 8 Conclusion

8.1 The conclusions from the various elements of the workstream leading to the recommendation to pursue Option 3 (build the DCO scheme) were as follows.

Workstream topic	Outcome
Cost	Option 3 (build the DCO Scheme) cheapest in net present value than other assessed options. With the same delivery method (public or private funding and operations), also cheapest in net present value than Option 1 (further 5 years use of EfW then DCO)
Cost – Gate fee	The gate fee varies in individual years until all options are built. Once each option is ready for use, option 3 consistently provides the cheapest gate fee.
Technology	All options use EfW; Option 3 has Advanced Moving Grate Technology, designed into DCO application following advice from Ramboll that this is most robust for anticipated waste volumes
Recycling assessment	Base assumption is 50%, consistently with current North London Joint Waste Strategy. Option 3 allows for treatment of waste if that level is not reached, with the ability to use any excess capacity for third party waste (with associated income)
Merchant Markets	Option 3 has limited reliance on market availability (contingency only), and greater resilience to regulatory change relating to waste export
Environmental impacts	Air quality – Option 3 has best available technology for flue gas treatment incorporated into design; not guaranteed with an out of London solution

<b>Workstream topic</b>	<b>Outcome</b>
Environmental impacts	Transport – environmental impacts of transport reduced with more local scheme
Environmental impacts	Employment and area regeneration – apprenticeships and potential for local employment with EcoPark solution
Planning and Permitting risk	<p>Planning risk for Option 3 managed through DCO application; for option 4 facilities would be in existence; for option 5, assumption that planning in place is a significant risk.</p> <p>Permit risk for Option 3 managed through Environment Agency permit application; position for Options 4 and 5 as with planning.</p>
Procurement and Contract risk	All options can be delivered in contract and procurement terms. Risk transfer levels to be negotiated and will depend on approach to packaging contracts and procurement method – Option 3 no worse than other options
SWOT	Positive and negative points consolidated from reports on EfW condition, markets, planning and permitting risk, environmental factors; Option 3 significantly better than all others.
Existing EfW risk	Risks of catastrophic failure, with attendant costs of waste diversion or capital expenditure on plant, increase with time; Option 3 with maximum 2 year delay provides optimum delivery time to manage risk

## Appendix A1 Financial Model Building Blocks



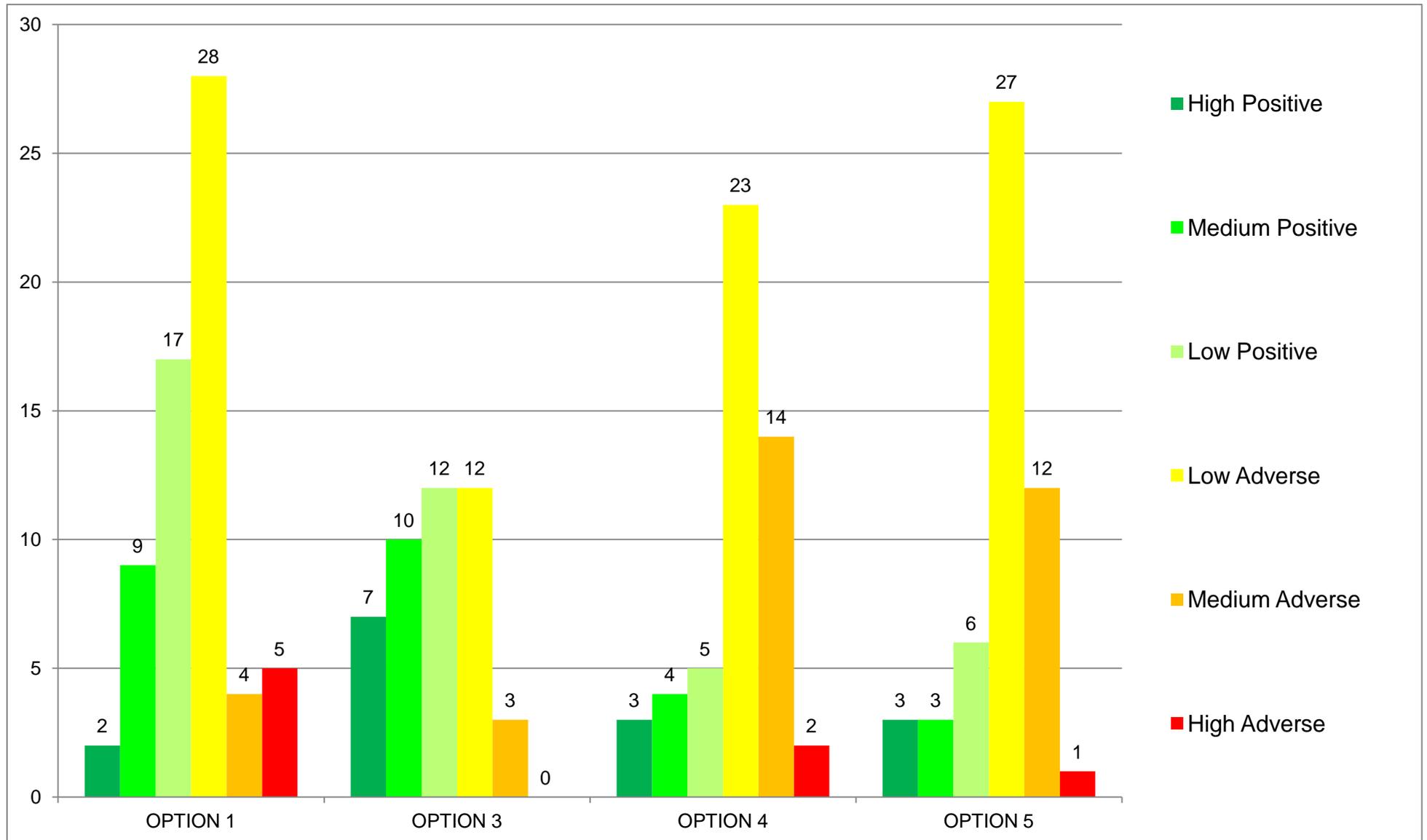
The total debt service for Option 5 is slightly less than the debt service for Option 3b (£64m vs. £66m). This is linked to the construction of the RRF. On Option 3b, RRF construction is financed with a separate tranche of PWLB to the ERF (because it occurs earlier). This RRF debt is therefore repaid over 15 years in Option 3b, rather than spread over 30 years as in Option 5. This makes Option 3b RRF debt servicing c. £2m higher in year 2030/31.

## Appendix A2 SWOT Analysis Scoring Conclusions

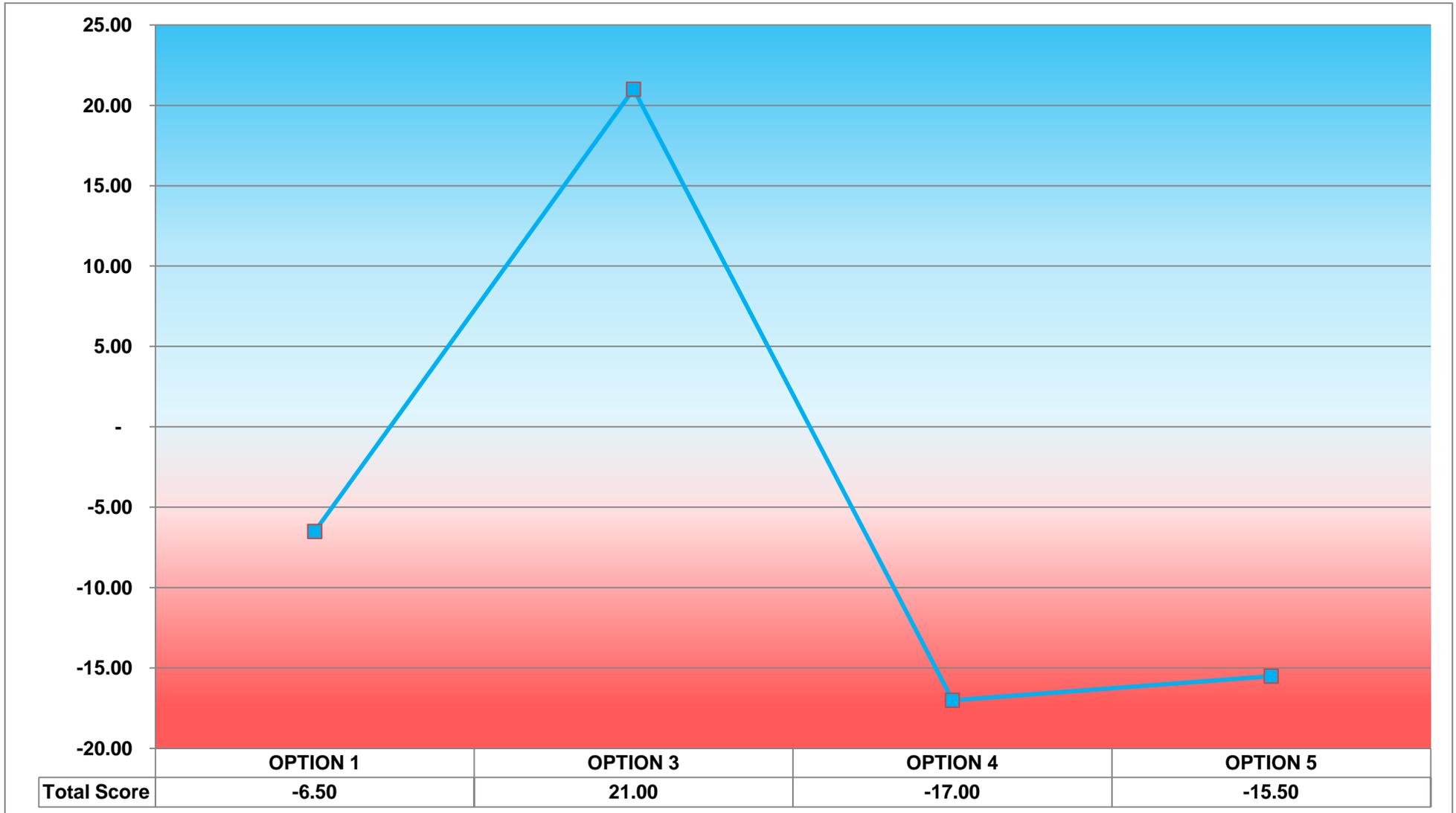
A score was applied to each of the ratings identified previously so that an overall SWOT score for each of the Options could be obtained. The following scoring system was applied:

Weight	Numerical value
Highly Positive	2
Medium Positive	1
Low Positive	0.5
Low Adverse	-0.5
Medium Adverse	-1
High Adverse	-2

**Total Count of Identified Factors Per Option**



### SWOT Results



The scores below represent the sum of the identified factors/risks within each category:

<i>Highest score per category</i>		<i>Lowest score per category</i>											
	Non-model Financial	Markets	Asset Issues	Planning and Regulation	Technical Performance and Capacity	Design and Operation	Environmental Impacts	Heat Off Take	Contract/ Procurement	Governance	Human Resources	External Relations	Total
OPTION 1	-2	-2.5	2	-3.5	-3	2.5	0.5	0.5	-0.5	0	-0.5	0	<b>-6.5</b>
OPTION 3	-2.5	-1	4	3.5	1	4.5	7	1.5	0.5	1	-0.5	2	<b>21</b>
OPTION 4	-2	-4	-3.5	-2	2	-2.5	0	-1	0	-1	-1	-2	<b>-17</b>
OPTION 5	-4.5	-1	-3.5	-3.5	1	2	-0.5	-1	-1	-0.5	-1	-2	<b>-15.5</b>

## Appendix A3 Socio-Environmental-Economic Appraisal Outcomes

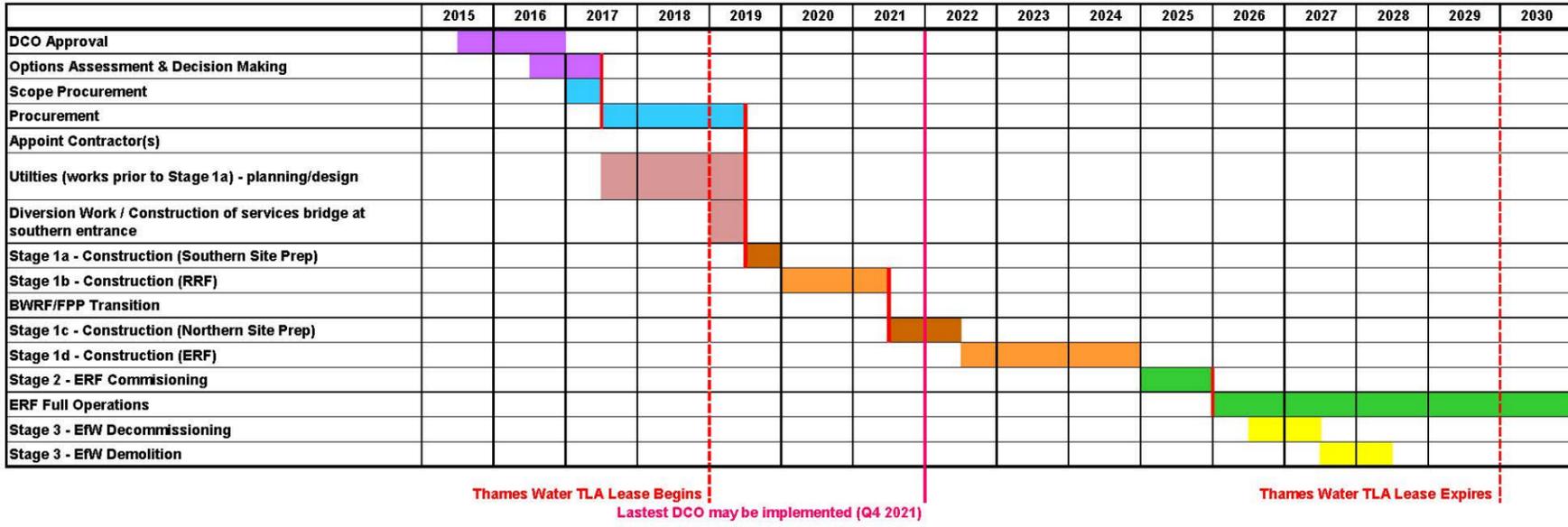
The options were assessed against these criteria, with a score based on categories from Major Positive through Neutral to Major Negative, and over the short, medium and long term.

The outcome from the exercise is a table showing the outcomes of the individual assessments:

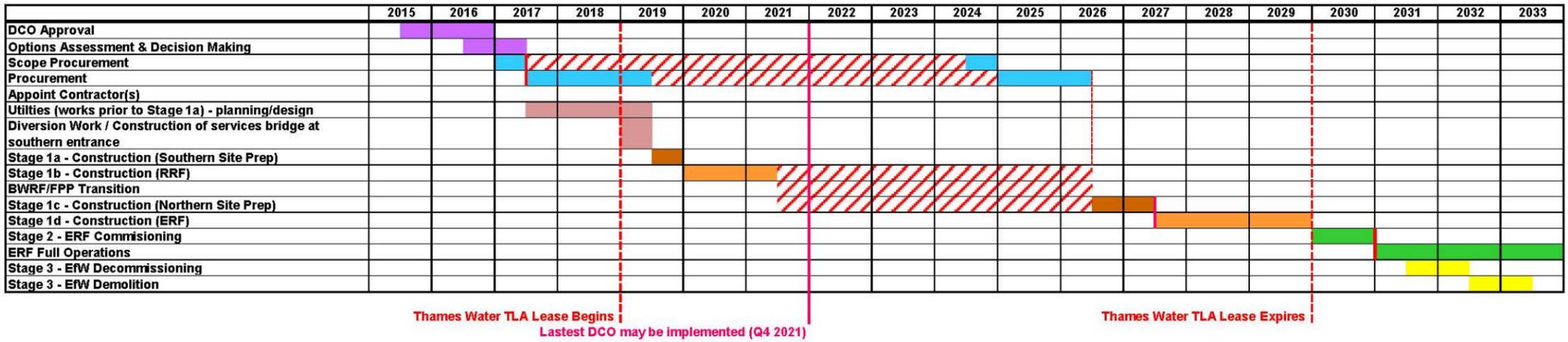
	1 Extend the life of the existing facility	3 Build new ERF (the DCO scheme)	4 Build new RRF and export all waste to a merchant EfW	5 Build new RRF and export all waste to a new ERF under a PPP
Criteria	Option 1	Option 3	Option 4	Option 5
1. Will it minimise emissions of greenhouse gases?	+	++	0	++
2. Will it increase the proportion of energy both purchased and generated from local renewable and sustainable resources?	+	++	--	--
3a Will it improve air quality? (local)	0	+	++	++
3b Will it improve air quality? (global)	0	+	0	+
4. Will it encourage the use of local sustainable products?	+	++	--	--
5. Will the regeneration have immediate and long-term benefits for deprived areas?	+	+	-	-
6. Will the plan/proposal reduce overall transport distances for waste?	+	+	--	--
7. Will the plan/proposal encourage sustainable economic growth through provision of adequate waste management facilities?	+	++	--	--
8. Will the plan/proposal support the creation of a broad range of jobs and employment opportunities?	0	-	--	--
9. Will it support civic engagement and encourage the involvement and participation of a diverse range of stakeholders?	+	+	-	-

## **Appendix A4 Timelines for Each Option**

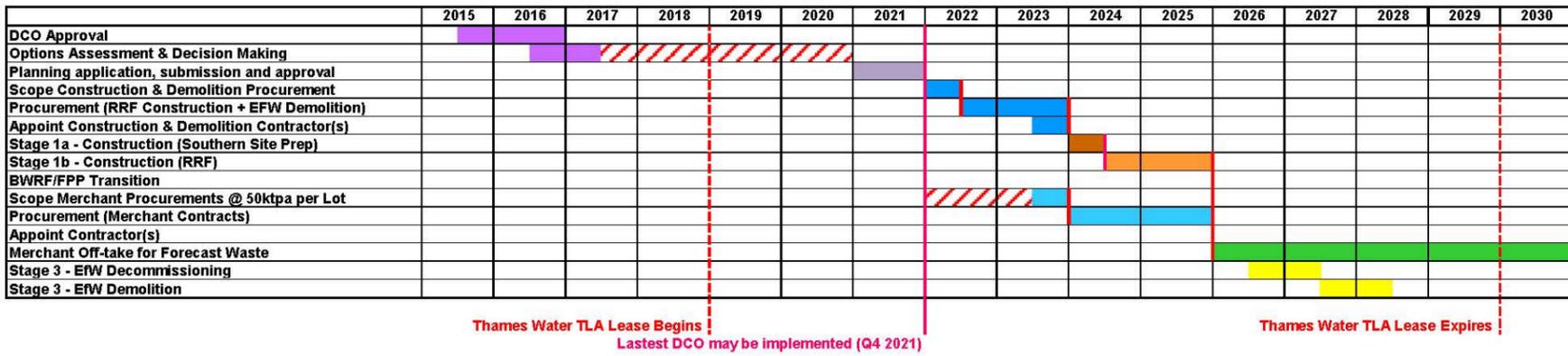
**OPTION 3 (submitted as part of the DCO Application)**



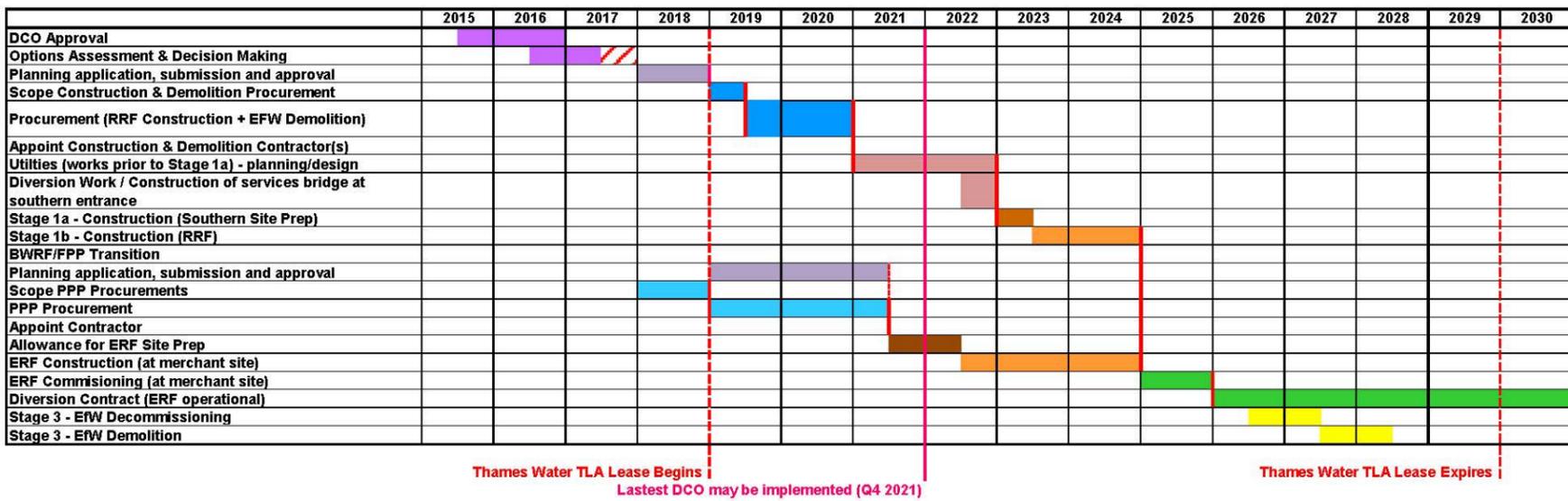
**OPTION 1 (Note: Separate procurement activities are shown to demonstrate programme flexibility)**



**OPTION 4 (Note: Separate procurement activities are shown to demonstrate programme flexibility)**



**OPTION 5 (Note: Separate procurement activities are shown to demonstrate programme flexibility)**



## Appendix A5 Glossary of Waste Management Terms

Term/Acronym	Definition
BAT	Best Available Techniques
C&I waste	Commercial and industrial waste
Capex	Capital expenditure
Constituent Boroughs	The seven north London boroughs that make up the Authority: London Boroughs of Barnet, Camden, Enfield, Hackney, Haringey, Islington, Waltham Forest
DCO	Development Consent Order
DoE	Directors of Environment
DoF	Directors of Finance
EA	Environment Agency
EfW	Energy-from-Waste
EIB	European Investment Bank
EPC	Engineer, Procure, and Construct
ERF	Energy Recovery Facility proposed in the DCO
Gate fee	The amount payable per tonne for the disposal of waste
GLA	Greater London Authority
IVC	In-Vessel Composting
ktpa	Kilotonnes per annum e.g. 1 ktpa = 1000 tonnes per annum
LP	Local Partnerships
LWL	LondonWaste Limited
MFWG	Member Finance Working Group
MOSG	Members and Officers Steering Group
MSW	Municipal Solid Waste
Municipal waste	Waste collected by a local authority, consisting of everyday items that are discarded by the public and businesses
MW	Megawatt
NPV	Net present value: the net value of future cashflows of an activity over time expressed as a single amount as at today's date
NLWA	North London Waste Authority
NOx	Nitrogen oxides
Opex	Operational expenditure i.e. cost of running a facility

<b>Term/Acronym</b>	<b>Definition</b>
PPP	Public-private partnership i.e. Contract with a private sector company largely funded by private sector borrowing
PWLB	Public Works Loan Board
RDF	Refuse-derived fuel
RFPF	Recycling and Fuel Preparation Facility
RRC	Reuse and Recycling Centre for public use (formerly referred to as HWRCs or CA sites)
RRF	Resource Recovery Facility – a building for the handling, sorting and transfer of wastes
SWOT	Strengths, Weaknesses, Opportunities, Threats
tpa	Tonnes per annum
VfM	Value for Money
WRAP	Waste and Resources Action Programme
WTS	Waste Transfer Station