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1. PURPOSE

- 1.1 The purpose of the requirement will be to identify the best value infrastructure investment strategy, weighing the costs of separation and different treatment/disposal pathways against the economic, environmental and social benefits. The analysis will proceed in two stages.
- 1.2 The first stage will assess the costs and benefits of increasing separation within the waste infrastructure system.
- 1.3 The second stage will assess the costs and benefits of directing the seaparted waste streams down different treatment/disposal pathways. The horizon for analysis will be 2020 to 2050.
- 1.4 Costs (as defined in section 4) should include the full economic, environmental and social costs of proposed investment pathways. At each stage, a series of plausible options should be identified. These options should be compared according to a life-cycle assessment; ideally, a systems analysis will be performed on the implications of different separation options – e.g. upstream and downstream impacts.

2. BACKGROUND TO THE CONTRACTING AUTHORITY

- 2.1 The Authority (Her Majesty's Treasury) is the Government's economic and finance ministry, maintaining control over public spending, setting the direction of the UK's economic policy and working to achieve strong and sustainable economic growth.

3. BACKGROUND TO REQUIREMENT/OVERVIEW OF REQUIREMENT

- 3.1 The National Infrastructure Commission (“NIC”) is an independent body (an Executive Agency of HM Treasury) which provides the government with impartial, expert advice on major long-term infrastructure challenges. Whilst Her Majesty's Treasury is the Contracting Authority, all analysis and outputs in the requirement are commissioned by, and will be delivered by the successful Supplier exclusively to, the NIC. Analysis and outputs must not be shared or discussed with any party other than the NIC, without explicit NIC consent.
 - 3.2 The NIC was set up in an interim basis on 5 October 2015 and formally became an Executive Agency of HM Treasury on 24 January 2017. The NIC's objectives are to support sustainable economic growth across all regions of the UK, improve competitiveness and improve quality of life.
 - 3.3 The NIC has committed to delivering a National Infrastructure Assessment (NIA) once in every Parliament, which will assess the UK's long-term infrastructure needs (across a 10-30 year horizon) with recommendations to the government. The NIA covers six infrastructure sectors (transport, energy, water and wastewater, digital communication, solid waste and flood risk management), also considering their interdependencies and wider cross-cutting issues. The delivery of the NIA will be overseen by the NIC's Commissioners, appointed by the Chancellor. The NIA is being driven by an extensive programme of stakeholder engagement, including sector workshops, regional visits and social research, as well as a public call for evidence.
 - 3.4 The NIA will comprise two phases. The first will involve the production of a Vision and Priorities document, which will identify long-term infrastructure needs and consult on options to address these, and will be published this summer. The second phase will
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be preparation of the final National Infrastructure Assessment, which will include recommendations to the government, and will be published in 2018.

- 3.5 In May 2016, the NIC published a [consultation](#) on the scope and methodology of the NIA. This consultation closed in August 2016 and the NIC published its [response](#) in October 2016.
- 3.6 The recommendations produced by the NIC need to be consistent with the fiscal and economic remits as set out by the Chancellor of the Exchequer in the [Remit Letter for National Infrastructure Commission](#). In order to do this, the NIC needs to develop a comprehensive understanding of all potential funding sources to assess the financial viability of its long-term strategic infrastructure plans.
- 3.7 Potential Providers should read both the NIC’s consultation on the NIA, as well as the [HM Treasury’s response](#) to its own consultation regarding the establishment and functions of the NIC, in order to understand the broader context for this requirement and inform their response.

4. DEFINITIONS

4.1 Definitions:

Expression or Acronym	Definition
NIC	- National Infrastructure Commission
NIA	- National Infrastructure Assessment
Costs	- Economic: both opportunity and accounting costs; - Environmental: emissions measured in carbon dioxide equivalents, plus additional environmental impacts – e.g. leachate; and - Social: monetised and non-monetised costs to individuals.

5. SCOPE OF REQUIREMENT

- 5.1 The successful Supplier will be required to provide a report that will begin by mapping material (and waste) flows in the household and commercial and industrial sectors through the UK waste system, highlighting capacity and potential capacity gaps.
- 5.2 The first stage of the analysis will identify a series of feasible separation options over the defined horizon. Costs will be attributed to these options. These will include:
- 5.2.1 the separation of food waste from the residual stream in England;
 - 5.2.2 the separation of all biodegradable waste from the residual stream; and
 - 5.2.3 the separation of plastics/fossil content from the residual waste stream.
- 5.3 The second stage of analysis will assess the costs and benefits directing the separated waste streams down different treatment/disposal pathways.



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- 5.4 The analysis will take into account both the life-cycle and system costs of the options, preferably using the WRATE analytical tool and databases. For example, it will consider the cost implications of changing the composition of EfW/AD feedstock or the secondary market implications of increasing the supply of plastic recyclate. The benefits for these options should be considered indirectly, but this analysis must fit the NIC's objectives, particularly the 'sustainable growth' and 'quality of life' objectives.
- 5.5 The variables for consideration will be:
- 5.5.1 greenhouse gas emissions (measured in carbon dioxide equivalents);
 - 5.5.2 other environmental impacts, including impacts on air and water quality;
 - 5.5.3 cost per unit (gate fee, or appropriate comparator); and
 - 5.5.4 the value of energy supplied and the form in which it is supplied (electricity or heat) - consideration should be given to how the energy outputs can contribute to the power, heat and transport sectors.
- 5.6 Case studies of different separation systems should be considered, including an analysis of the Welsh and Scottish Governments' regimes, alongside other leading international examples.
- 5.7 A horizon scanning exercise on future technologies should be undertaken, which will estimate the impact these technologies may have on waste arisings and waste infrastructure capacity.
- 5.8 The analysis should also aim to include consideration of potential lock-in in different pathways to 2050.

Not in scope

- 5.9 Upper circular economy (prevention, reuse). As a baseline, current policies, including producer responsibility, will be assumed.

6. THE REQUIREMENT

- 6.1 The expected outputs of this requirement will include:
- 6.1.1 a map of the UK waste system for the household, commercial and industrial sectors, illustrating the flows of materials and waste through the economy;
 - 6.1.2 a two-stage life-cycle analysis, preferably using the WRATE analytical tool and databases. Stage one will consider the costs of increased separation. Stage two will assess the costs and benefits of directing the newly separated waste streams down different treatment/disposal pathways;
 - 6.1.3 case studies of national (UK) and international best practice, including an analysis of the Welsh and Scottish systems; and
 - 6.1.4 a horizon-scan of possible future technologies, their implications on waste infrastructure demand, and plausible estimates of the date of future application.



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- 6.2 All materials (including research, calculations and models) used to generate the analysis should be made available to the Commission for future use. These materials should be made fully accessible to the NIC.
- 6.3 At the start of the project the NIC would expect to hold an inception/scoping meeting with the successful Supplier, and for a short inception report to then be provided which clarifies the approach to be taken, along with a plan setting out key milestones and dates for deliverables, risks and how these will be managed etc. – for agreement, before proceeding to carry out the analysis. The Authority expects the successful Supplier to work closely with the NIC, including fortnightly meetings and regular communication.
- 6.4 If required by the NIC the successful Supplier should work collaboratively with other third parties contracted by the NIC. That may include, but is not limited to, sharing analysis and methodologies and developing jointly agreed assessments and conclusions to support the overall findings of individually commissioned pieces of research.
- 6.5 The NIC can choose to provide relevant responses from the consultation and call for evidence, and other supporting documentation. Given time constraints the NIC would not expect the successful Supplier to spend a significant amount of time meeting with or interviewing a wider range of stakeholders. The NIC will be undertaking a significant amount of engagement with key stakeholders and where appropriate will be able to provide analysis and views from those engagements.
- 6.6 Empirical data that is used should be derived from a broad range of credible sources (with appropriate references and citations), in particular drawing on information and analysis that is already in the public domain, case studies looking in detail at previous success stories, lessons learned and deep dives.
- 6.7 The successful Supplier should also be prepared to present to technical and non-technical members of the NIC setting out the key findings, and the key assumptions, results, and caveats for the wider assessment in a clear and concise fashion, to ensure these are fully understood.
- 6.8 The successful Supplier should submit a final report detailing analysis, findings and comments in a clear and concise fashion – this should reflect any inputs/requests made by the NIC during the production phase. The NIC intends to publish this report.
- 6.9 As part of NIC’s quality assurance process, the NIC can and will likely choose to have a peer review of the output to be conducted by a third party or NIC’s expert advisory panels. It is required that the successful Supplier will need to work proactively and collaboratively with the NIC to consider any reasonable comments and to incorporate them into their work and output accordingly.



7. KEY MILESTONES

7.1 Potential Providers should note the following proposed project milestones that the NIC will measure the quality of delivery against:

Milestone	Description	Timeframe
1	Project inception meeting with NIC to include: clarifying the approach to be taken, and providing a plan setting out key milestones and dates for deliverables, risks and how these will be managed, etc.	Within week 2 of Contract Award By 15 th August 2017
2	Inception report finalised and agreed with NIC. Agreed approach and work plan in place and fortnightly updates with NIC diarised and underway.	Within week 4 of Contract Award By 29 th August 2017
3	A demonstration on how the analysis set out in Requirement 6.1 is being undertaken.	Within week 12 of Contract Award By 24 th October 2017
4	Interim report addressing the issues set out in Requirement 6.1 including draft analysis of the findings.	Within week 20 of Contract Award By 19 th December 2017
5	First draft of final report to be shared with NIC	Within week 24 of Contract Award By 16 th January 2018
6	Final draft of final report to be submitted to NIC	Within week 28 of Contract Award By 13 th February 2018

7.2 The above timetable assumes the Contract will be awarded by 1st August 2017. As such it is subject to change and is dependent upon key gateway points being met in terms of receiving information from the customer and obtaining all required approvals.

8. NIC'S RESPONSIBILITIES

8.1 The NIC will share pertinent information received through relevant stakeholders and introduce the successful Supplier to those stakeholders, whom can offer valuable advice on the requirement.

9. REPORTING

9.1 As set out in Section 7 (Key Milestones). Additionally, the successful Supplier will be expected to update the NIC on project progress on at least a fortnightly basis via a meeting or phone call, including to flag any issues or early findings.



10. VOLUMES

10.1 This is a substantial piece of work – the expectation is that the key outputs and related materials will be both extensive and of publishable standard.

11. CONTINUOUS IMPROVEMENT

11.1 The successful Supplier will be expected to give due consideration to the way in which the required Services are to be delivered throughout the Contract duration and can be continually improved.

11.2 Changes to the way in which the Services are to be delivered must be brought to the NIC's attention and agreed prior to any changes being implemented.

12. QUALITY

12.1 The NIC will be looking to cite the findings from the project in late 2017 or early 2018, therefore, outputs should be to a publishable standard, with all assumptions and caveats clearly highlighted.

12.2 The source of data and assumptions, and advice on its robustness, should be clearly set out, and it will need to be demonstrated how the findings have been suitably quality assured, including through peer review and audit. The report will need to be a self-standing piece that can set out its analysis and justify its conclusions to leading experts in the fields of infrastructure and finance.

12.3 The final report will be published on the NIC's website.

13. PRICE

13.1 Prices are to be submitted via the e-Sourcing Suite excluding VAT. Please note Appendix E is not used for this requirement and there is a specific Price questionnaire.

13.2 Bids for the full requirement are expected to be in the range of £50,000 to £80,000 (exc. VAT). Price submissions that exceed the maximum ceiling of £80,000 (exc. VAT) will be deemed non-compliant and will not progress any further in the competition evaluations.

13.3 Prices should be inclusive of all expenses and exclusive of VAT.

14. STAFF AND CUSTOMER SERVICE

14.1 The NIC requires the successful Supplier to provide a sufficient level of resource – with sufficient but not excessive senior involvement and oversight – throughout the duration of the Contract in order to consistently deliver a quality service to all Parties at value for money.

14.2 The successful Supplier's staff assigned to the Contract shall have the relevant qualifications, experience and expertise to deliver the Contract. The NIC does not prescribe any single set of minimum requirements in terms of skills or qualifications, but the successful Supplier must demonstrate as part of its bid that its delivery team contains staff with sufficient expertise and skills.

14.3 The successful Supplier should not replace staff members in the team which was assembled and presented in the bidding process without informing and getting consents from the NIC.



- 14.4 The successful Supplier shall ensure that staff understand the NIC’s vision and objectives and will provide excellent customer service to the NIC throughout the duration of the Contract.

15. SERVICE LEVELS AND PERFORMANCE

- 15.1 The NIC will measure the quality of the successful Supplier’s delivery by:

KPI/SLA	Service Area	KPI/SLA description	Target
#1	Agreed approach	An inception report to be provided, and agreed by NIC, clarifying the approach to be taken, along with a plan setting out key milestones and dates for deliverables, risks and how these will be managed, etc.	Within week 4 of Contract Award By 29 th August 2017
#2	Output from Interim Report for Requirement 6.1	An interim draft paper addressing the issues set out in the requirement including the first draft of analysis, views and findings.	Within week 20 of Contract Award By 20 th December 2017
#3	Outputs from the Final Report, publishable form	A final report cover the key outputs described in the requirement and the delivery of the tool described in the requirement.	Within week 28 of Contract Award By 13 th February 2018

16. SECURITY REQUIREMENTS

- 16.1 Due care must be taken by the successful Supplier to protect the confidentiality of all analysis and outputs (including in development and draft phases) relating to this requirement, to avoid pre-empting the NIC’s placement of the final report in the public domain.

17. INTELLECTUAL PROPERTY RIGHTS (IPR)

- 17.1 All analysis (including any calculations and models) used to generate the outputs should be provided to the NIC for future use. The Authority wishes that this analysis, and the interim and final reports, will be the property of the NIC. The successful Supplier must not disclose the report (either in part or in full) to any third parties prior to publication by the NIC, unless the NIC gives express consent to do so.

18. PAYMENT

- 18.1 Payment can only be made following satisfactory delivery of the pre-agreed certified products and deliverables. Payment will be made in arrears, subject to invoice(s) being submitted for work carried out. Payments will be made as follows against the milestones (as of section 7.1):

- 18.1.1 20% after delivery of milestone 3;



18.1.2 40% after delivery of milestone 4; and

18.1.3 40% after delivery of milestone 6.

18.2 Before payment can be considered, invoice(s) must include a detailed elemental breakdown of work completed and the associated costs.

19. ADDITIONAL INFORMATION

19.1 The successful Supplier should demonstrate that they are open to working collaboratively with other suppliers, contracted by the NIC in order to deliver related pieces of analysis.

20. LOCATION

20.1 The location of the Services will be carried out at the offices of the successful Supplier. However frequent meetings will need to take place with the National Infrastructure Commission at the successful Supplier's offices, or at the NIC's offices in the Eastcheap Court 11 Philpot Lane, London EC3M 8UD and other meeting spaces 1 in Central London, procured ad hoc by the NIC.