

Riverside Energy Park

Applicant's response to Mrs Margaret J White Submission (09 August 2019)

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Contents

1 APPLICANT'S RESPONSE TO MRS MARGARET J WHITE SUBMISSION (9 AUGUST 2019) 2

 1.1 Introduction 2

 1.2 Public health response 2

 1.3 Ford Dagenham production facility response..... 7

 1.4 Conclusions 8

1 Applicant's response to Mrs Margaret J White Submission (9 August 2019)

1.1 Introduction

- 1.1.1 This document, submitted for Deadline 7 of the Examination, contains the Applicant's response to the additional submission by Mrs Margaret J White (herein referred to as Mrs White), accepted after Deadline 4 at the discretion of the Examining Authority (ExA) and published 09 August 2019.
- 1.1.2 Mrs White previously submitted a Written Representation (WR) (**REP2-111**) at Deadline 2. The Applicant has responded to this WR in **Section 5.5** of the **Applicant's responses to Written Representations (8.02.14, REP3-022)**.
- 1.1.3 In the latest submission, Mrs White raises two main areas of concern with the Proposed Development:
- Impacts on public health, specifically children with existing health needs. Mrs White encloses an anecdotal testimony from a local resident, describing a series of events following a visit to the Crossness Local Nature Reserve.
 - Mrs White presents a view of operational curtailment and land ownership of the Ford Dagenham production facility, located to the north of the River Thames.
- 1.1.4 This response addresses each of these concerns in turn.

1.2 Public health response

- 1.2.1 Mrs White encloses an anecdotal testimony from a local resident dated 30 July 2019. The statement describes a series of events in relation to a local resident's child (age unknown) with a hereditary illness (unknown), who at some point in 2019 suffered exacerbated symptoms while spending "*a couple of hours*" at the Crossness Local Nature Reserve, which is located approximately 200m from the Riverside Resource Recovery Facility (RRRF) site boundary.
- 1.2.2 The statement as published on the Examination Website is heavily redacted. In order to respond with a reasonable level of specificity, the Applicant has presumed that the child's illness is a form of respiratory disease, and that the percentage figures referred to represent blood oxygen saturation levels.
- 1.2.3 Short term and acute effects on respiratory systems have been assessed in **Environmental Statement (ES) Appendix C.2 Stack Modelling (6.3, REP2-038)**. The summary and conclusions of this assessment are presented in **Chapter 7 Air Quality** of the **ES (6.1, REP2-019)**. **Table 7.34, Table 7.35** and the text around these tables show that the effect of emissions from REP on

short term air quality would be insignificant. **Table 7.37** shows that there will be no likely significant residual air quality effects on human receptors as a result of the construction or operation of the Proposed Development, when considered either in isolation or in combination with other planned developments.

- 1.2.4 Since the air quality assessment was undertaken, the Applicant has introduced average and annual NO_x emission limit values for the energy recovery facility (ERF) and the combined heat and power (CHP) engine element of the Anaerobic Digestion facility. In the case of the CHP engine, the emission limit values proposed are lower than the emission rate assumed in the ES due to the adoption of selective catalytic reduction (SCR) technology. These limit values are secured via **Requirement 15** and **Requirement 16** respectively of the **draft Development Consent Order (dDCO) (3.1, Rev 3)**. This approach will ensure that NO_x emissions will not be above those assessed in the ES and therefore effects will remain insignificant throughout the operational life of the development.
- 1.2.5 The Mayor's Air Quality Strategy (2015) has been fully considered in preparing the assessment presented in **Chapter 7 Air Quality** of the **ES (6.1, REP2-019)**. Statements of Common Ground (SoCG) have also been signed with the Environment Agency (**8.01.11, REP5-013**), Natural England (**8.1.1, AS-013**), London Borough of Barking and Dagenham (**8.01.08, REP3-017**), Dartford Borough Council (**8.01.09, REP3-018**) and the Port of London Authority (**8.01.07, REP3-016**), all of which agree with the Applicants assessment of air quality effects, as presented in the ES and supporting documents.
- 1.2.6 The local resident's testimony reasons that air quality will deteriorate with the introduction of a second ERF. This is not the case. As stated in **Paragraph 7.5.50** of **Chapter 7 Air Quality** of the **ES (6.1, REP2-019)** the emissions from RRRF and the Crossness Sewage Treatment Works have been taken into consideration in the baseline air quality assessment. The predicted emissions from REP have then been added to this baseline to give an overall prediction of likely significant effects. As the Crossness Sewage Treatment Works incinerator has now been closed down, as reported on **Pages 6** and **9** of **Thames Water's Interim Report and Consolidated Financial Statements 2018/19**¹, this is a conservative assessment.
- 1.2.7 Impacts on public health have been further clarified in the **Post Hearing Note on Public Health and Evidence (8.02.27, REP3-033)**. **Section 2** sets out the position adopted by Public Health England (PHE), and supporting evidence, with regards to health impacts from ERFs. In summary:
- PHE considers that "*While it is not possible to rule out adverse health effects from modern, well regulated municipal waste incinerators with*

¹ <https://corporate.thameswater.co.uk/-/media/Site-Content/Thames-Water/Corporate/AboutUs/Investors/Thames-Water-Interim-Report-2018-19.pdf>

complete certainty, any potential damage to the health of those living close-by is likely to be very small, if detectable”;

- research commissioned by PHE and published in 2018 and 2019 shows that there is no evidence that living close to an ERF is associated with increased infant mortality or other infant health risks; and
- abatement systems in place for particulate matter in ERFs are very effective at avoiding emissions of ultrafine particles.

1.2.8 These conclusions are arrived at by Government's independent regulator on public health, based on statistically significant and empirical evidence-based methods. The widely referenced note, published by the Health Protection Agency (now superseded by PHE) in 2009, is RCE-13 “*The Impact on Health of Emissions to Air from Municipal Waste Incinerators*”².

1.2.9 The Applicant has described further research conducted since the RCE-13 note was published in **Section 2.2 of the Post Hearing Note on Public Health and Evidence (8.02.27, REP3-033)**. These studies were commissioned from the Small Area Health Statistics Unit (SAHSU), which is based at Imperial College London and Kings College London. Details of the study can be found at <https://www.sahsu.org/content/incinerators-study>.

1.2.10 The methodology and results of the studies have been published in a series of papers in scientific journals. The Post Hearing Note considered the two most recent papers at the time.

- The primary paper which provides the results of the main study is known as Ghosh et al (2018)³ and has been submitted as **Appendix A to the Post Hearing Note on Public Health and Evidence (8.02.27, REP3-033)**. It considered a range of health outcomes for babies and infants and found no associations between health outcomes and proximity to an ERF.
- A second paper, known as Freni-Sterrantino et al (2019)⁴ has been submitted as **Appendix B to the Post Hearing Note on Public Health and Evidence (8.02.27, REP3-033)**. The authors compared infant mortality rates within a 10km radius of ERFs with comparator areas for five years before the opening of the ERF and five years afterwards. The data showed that infant mortality rates after the ERFs opened were lower than before the plants opened, both in the ERF areas and the comparator areas. The difference was actually slightly greater in the ERF areas (i.e.

² <https://www.gov.uk/government/publications/municipal-waste-incinerators-emissions-impact-on-health>

³ Ghosh RE, Freni Sterrantino A, Douglas P, Parkes B, Fecht D, de Hoogh K, Fuller G, Gulliver J, Font A, Smith RB, Blangiardo M, Elliott P, Toledano MB, Hansell AL. Fetal growth, stillbirth, infant mortality and other birth outcomes near UK municipal waste incinerators; retrospective population based cohort and case-control study. Environment International. 2018.

⁴ Freni-Sterrantino, A; Ghosh, RE; Fecht, D; Toledano, MB; Elliott, P; Hansell, AL; Blangiardo, M. Bayesian spatial modelling for quasi-experimental designs: An interrupted time series study of the opening of Municipal Waste Incinerators in relation to infant mortality and sex ratio. Environment International. 128 (2019) 106-115 (Freni-Sterrantino et al, 2019).

infant mortality improved faster in the areas within 10 km of ERFs), but the difference was not statistically significant. The authors also carried out a similar study for the sex-ratio of births and found no change between the periods before and after the opening of an ERF.

- 1.2.11 The Applicant has responded to the Greater London Authority (GLA) comments on the **Post Hearing Note on Public Health and Evidence in Section 12.4 of the Applicant's Response to the GLA Deadline 4 Submissions (8.02.46, REP5-017)**. This response considers a recent scientific paper published by the SAHSU on 21 June 2019, authored by Parkes et al⁵. The objective of the paper was *"To conduct a national investigation into the risk of congenital anomalies in babies born to mothers living within 10 km of an MWI associated with: i) modelled concentrations of PM₁₀ as a proxy for MWI emissions more generally and; ii) proximity of residential postcode to nearest MWI, in areas in England and Scotland that are covered by a congenital anomaly register."* Under objective (i), which related congenital anomalies to modelled concentrations and so would be considered the more representative approach, the study found no association. Under objective (ii), there was a small excess risk, but the paper's authors note that this may be due to residual confounding.
- 1.2.12 The researchers issued a statement⁶ on the Imperial College website which takes account of the full body of work, not just this latest paper. This statement is included as **Appendix A to the Applicant's Response to the GLA Deadline 4 Submissions (8.02.46, REP5-017)** and aligns with PHE's view of public health impacts.
- 1.2.13 While these studies did not consider the specific health outcome raised in Mrs White's latest submission exclusively, they do represent the most recent, most comprehensive and most relevant research available, and the conclusions support PHE's position statement. Given that REP would actually operate within lower emission limits than the ERFs considered in the study, as set out in the **Environmental Permit and Air Quality Note (8.02.06, REP2-057)**, the conclusions supersede any misguided perceptions regarding public health impacts arising from modern, well regulated ERFs.
- 1.2.14 With regards to respiratory disease specifically, **Paragraph 9 of RCE-13** states that short term exposure to increased concentrations of particulate matter can give rise to cardio-respiratory effects. No thresholds of effect can be identified for either the effects of long-term exposure or for the effects of short-term increases in concentrations. PHE therefore considers that the appropriate approach is to estimate the size of that effect⁷. **Table 7.34 of Chapter 7 Air Quality of the ES (6.1, REP2-019)** provides the maximum

⁵ Parkes B, Hansell A.L., Ghosh R.E, Douglas P., Fecht D., Wellesley D., Kurinczuk J.J., Rankin J., de Hoogh K., Fuller G.W, Elliot P., and Toledano M.B. "Risk of congenital anomalies near municipal waste incinerators in England and Scotland: Retrospective population-based cohort study". Environment International (Parkes et al).

⁶ <https://www.imperial.ac.uk/news/191653/major-study-finds-conclusive-links-health/>

⁷ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/335090/RCE-13_for_web_with_security.pdf

ground level concentrations of particulates within the study area. The assessment of potential effects on human receptors from particulates is presented in **Paragraph 7.9.23**. The combined process contribution is below 0.5% of the relevant objective at all receptors, total concentrations are well below the objective and impacts are all Negligible.

1.2.15 The assessment also considered the impact of particulate emissions arising from additional road and river traffic associated with the Proposed Development. As set out in **Paragraphs 7.9.13** and **7.9.19**, the magnitude of impact is Negligible at all (assessed, worst case) locations and road and river traffic impacts are therefore considered not significant.

1.2.16 **Section 2.2** of the **Post Hearing Note on Public Health and Evidence (8.02.27, REP3-033)** sets out in detail how particulate matter will be monitored and abated with reference to the specific techniques proposed. The research referenced (Wilen et al (2007)⁸ and Buonanno et al (2012)⁹), provided as **Appendix C** and **Appendix D** to the **Post Hearing Note on Public Health and Evidence (8.02.27, REP3-033)** respectively, has shown that abatement systems that are in place for particulate matter in ERFs are very effective at avoiding emissions across the regulated spectrum, including ultrafine particles. **Section 3.3** of the note also emphasises the Environment Agency's position in relation to particulate emissions, as the Government regulator for the protection and enhancement of the environment in England. The Environment Agency's briefing note is provided as **Appendix E** to the **Post Hearing Note on Public Health and Evidence (8.02.27, REP3-033)** and contains the following statements.

- *“emissions from EfW plants make up just 0.03% / 0.05% of total UK PM10/ PM2.5 emissions. This is compared to 5.35% / 4.96% from traffic and 22.4% / 34.3% from domestic wood burning.”*
- *“the overall impact of an EfW plant's emissions on human health for a given amount of PM or NOx released will be lower than if that same amount was emitted by a car or a domestic wood fire. This is because EfW plants have tall stacks (chimneys) which help to disperse their emissions”*
- *“We consult Public Health England (PHE) on every EfW plant application that we receive and we will not issue a permit if its emissions will cause significant pollution or harm to human health.”*
- The Environment Agency also reiterates the PHE statement referred to in **Paragraph 1.2.7** of this response.

1.2.17 The Environment Agency has signed a SoCG (**8.01.11, REP5-013**) with the Applicant. As set out in **Paragraph 1.2.2** of the SoCG, *“The Parties agree that*

⁸ Wilen, C., Moilenan, A., Hokkinen, J., Jokiniemi, J. “Fine Particle Emissions of Waste Incineration”, March 2007

⁹ Buonanno, G, Scungio, M., Stabile, L, Tirlor, W. Ultrafine particle emission from incinerators: The role of the fabric filter, Journal of the Air and Water Management Association 62(1): 103:111, 2012

the ES forms the full and complete Environmental Impact Assessment (EIA) for the purposes of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017, as amended (the EIA Regulations) and it is further agreed that the ES contains sufficient environmental information to enable the Secretary of State to make their determination." The Parties also agree that the commissioning and operational phases of REP are to be addressed as part of the Environmental Permit application (including air quality modelling) as Duly Made on 17 December 2018, which the EA is currently determining.

1.3 Ford Dagenham production facility response

- 1.3.1 Mrs White asserts that on the day of the Accompanied Site Inspection (04 June 2019), she stated in contrast to the "*employee's comments*" (assumed to mean an employee of the Applicant), "*that the Ford plant opposite the site, on the north of the Thames, was now much reduced in operation.*"
- 1.3.2 As set out clearly in the Examining Authority's **Accompanied Site Inspection Itinerary (EV-002)**, "*Please note that the Examining Authority's (ExA) inspection of sites is not an opportunity to provide any oral representations on the project or discuss evidence*". As such, any discussions held between Mrs White and an employee of the Applicant would not form part of the examination. There are no formal minutes of discussions held on the day.
- 1.3.3 The Ford Dagenham production facility is located within the London Borough of Barking and Dagenham and is located immediately to the west of the Beam Park development and within the Riverside Opportunity Area Planning Framework (OAPF). The impacts of the development on this area are discussed in **Section 6.5 of the Applicant's response to the Greater London Authorities GLA Deadline 3 Submission (8.02.35, REP4-014)** which references the contour plots (**Figure 1a-1e**) contained in the **Applicant's Response to the Local Impact Report by London Borough of Havering (8.02.18, REP3-026)**. The Ford Dagenham production facility is well outside the lowest contours showing the impact of the development, and there are no significant effects predicted on the production facility or in the immediate surrounding area. In addition, please refer to the **Applicant's response to Air Quality Matters (8.02.70)** for further discussion on air quality matters generally.
- 1.3.4 A **Statement of Common Ground with London Borough of Barking and Dagenham (8.01.08, REP3-017)** has been agreed between the parties. The SoCG covers air quality, townscape and visual impacts, noise and the dDCO articles and requirements. In all cases, and regarding the wider Environmental Impact Assessment, the London Borough of Barking and Dagenham agrees that the assessments are complete, appropriate and result in acceptable impacts.
- 1.3.5 Caveats are noted in respect of air quality and noise impacts, which renders agreement subject to:

- the DCO securing the mitigation measures set out in the Code of Construction Practice and the Environmental Permit securing the emissions limits; and
- the DCO securing the proposed mitigation, and noise limits in accordance with the submitted details, and the securing of appropriate monitoring and planning enforcement measures in respect of the same, respectively.

The Applicant is bound to deliver these mitigation measures through **Requirements 11, 15, 16 and 21** of the **dDCO (3.1, Rev 3)**.

1.4 Conclusions

- 1.4.1 Mrs White can be assured that the Applicant regards public health as a highest priority and has developed its proposals to eliminate and mitigate public health impacts by adopting best practice design and operational principles, industry leading technology and proposing emissions limits at or beyond latest legislative requirements.
- 1.4.2 Air quality assessment undertaken by the Applicant demonstrates that there will be no likely significant residual air quality effects on human receptors as a result of the construction or operation of the Proposed Development, when considered either in isolation or in combination with other planned developments. Emissions from RRRF have been accounted for in the baseline assessment.
- 1.4.3 Research commissioned by PHE and published in 2018 and 2019 shows that there is no evidence that living close to an ERF is associated with increased infant mortality or other infant health risks. While these studies do not address respiratory disease in isolation, they represent the most recent, most comprehensive and most relevant research available, and the conclusions support PHE's position statement that "*any potential damage to the health of those living close-by is likely to be very small, if detectable*".
- 1.4.4 Emissions of particulate matter have been assessed in detail and based on conservative assumptions, indicate that effects on human receptors from operational impacts are all negligible. Research has shown that abatement systems that are in place for particulate matter in ERFs are very effective at avoiding emissions across the regulated spectrum, including ultrafine particles.
- 1.4.5 As agreed with the London Borough of Barking and Dagenham, the assessments undertaken in support of the ES and other application documents are complete, appropriate and result in acceptable impacts. Mitigation measures relating to air quality and noise are secured through the dDCO. The Ford Dagenham production facility is well outside the lowest contours showing the impact of the development (as shows on **Figure 1a-1e**) contained in the **Applicant's Response to the Local Impact Report by London Borough of Havering (8.02.18, REP3-026)**, and there are no significant effects in the area.