Thurrock Power Ltd Comments on Gravesham Borough Council's Deadline 2 Submission

Deadline 3

1 THURROCK POWER LTD COMMENTS

1.1 Introduction

1.1.1 This document provides the Applicant's comments on three matters raised in Gravesham Borough Council's Written Representation at Deadline 2 (REP2-066): noise, green belt and air quality.

1.2 Noise

1.2.1 The Applicant welcomes Gravesham Borough Council's comment in paragraph 5.1 that there are no immediate concerns for the council with regard to noise, and agrees with the comments in paragraphs 5.1 and 5.2 that the mitigation measures set out in the application should be implemented and monitoring should be undertaken where necessary.

1.2.2 Requirement 16 (in version 4 of the dDCO, REP2-014) provides for the control and monitoring of noise during operation.

1.2.3 Requirements 6 and 9 provide for the control of noise during construction. The Outline Code of Construction Practice referenced in requirement 5 sets out the commitment for construction noise management measures to be agreed with the planning authority prior to the start of construction and detailed out in the final CoCP approved under that requirement.

1.3 Green Belt

1.3.1 In its Written Representation, Gravesham Borough Council has raised concerns about the development of the flexible generation plant within the Green Belt. Two main points have been raised:

1. Whether the carbon footprint of the proposed development has been given sufficient weight in Thurrock Council's consideration of whether very special circumstances exist to justify inappropriate development within the Green Belt; and

2. Whether the Applicant has fully explored the potential of alternative sites that are located outside of the Green Belt, specifically the former Tilbury B Power Station site owned by RWE.

1.3.2 This response addresses each of those points in turn.

The weight given to the carbon footprint of the proposed development

1.3.3 As set out in the Applicant's response to First Written Question 1.2.1 (REP2-041), the proposed development is fully aligned with current policy on climate change, including the Committee on Climate Change's Sixth Carbon Budget (9 December 2020) and the Government's recent Energy White Paper (14 December 2020) and Ten Point Plan for a Green Industrial Revolution (November 2020).

1.3.4 A clear need for greater flexibility in energy generation and the provision of reliable back-up capacity has been established in the documents mentioned above. Thurrock Flexible Generation Plant is exactly the generation type identified in the Sixth Carbon Budget as being required for the UK to meet its decarbonisation goals. Land for carbon capture and storage has been safeguarded in the design of the proposed development, in accordance with carbon capture readiness requirements. In addition to this, the Applicant is confident that the gas reciprocating engines are suited to run on a blend of natural gas and hydrogen in the future.

1.3.5 Further details of the assessment of the proposed development on climate change are included in Chapter 14 of the Environmental Statement (APP-063).

1.3.6 In paragraph 4.6 Gravesham Borough Council states that:

1.3.7 "The applicant notes that new buildings are inappropriate development under the NPPF and so should not be approved except in very special circumstances. This is not a renewable energy project so not covered by NPPF paragraph 147."

1.3.8 The applicant does not accept this position. The NPPF states in full at paragraph 147 (emphasis added) that:

1.3.9 "When located in the Green Belt, **elements of** many renewable energy projects will comprise inappropriate development. In such cases developers will need to demonstrate very special circumstances if projects are to proceed. Such very special circumstances may include the wider environmental benefits associated **with increased production of energy from renewables.**"

1.3.10 As set out in the Statement of Case (APP-135) the proposed development will play a vital role in supporting increased production of energy from renewables by providing energy storage and flexible back-up generating capacity, both of which are needed to allow wider deployment of intermittent renewables. From the Statement of Case:

1.3.11 "In addition, while it is not a renewable energy project in its own right, it is designed to support the delivery of power from renewable sources and provides additional resilience in the National Grid network, as well as additional security of our electrical supply."

1.3.12 The Applicant considers that as a necessary element of energy infrastructure to enable increased production of energy from renewables, the development benefits from the very special circumstances identified in NPPF paragraph 147.

1.3.13 In its Local Impact Report (REP2-077), Thurrock Council ("TC") has undertaken an assessment of whether very special circumstances exist which justify inappropriate development within the Green Belt. Paragraphs 7.48 – 7.55 consider the first of the very special circumstances which was identified by the Applicant in its Planning Statement (APP-135), which is the development's contribution to supporting the growth of renewable energy and lowering carbon emissions.

1.3.14 TC has correctly referred to NPS EN-1, which recognises the need for both significant energy infrastructure projects and significant gas infrastructure. TC also refers to NPS EN-2, which highlights gas as being one of the "cleaner" fossil fuels.

1.3.15 Although the Government has confirmed that it will be reviewing the Energy NPSs, the recent Energy White Paper (on page 55) makes it clear that while that review is undertaken, *"the current suite of NPS remain relevant government policy and have effect for the purposes of the Planning Act 2008"*.

1.3.16 TC concluded (at paragraphs 7.54 and 7.55) that the project can help provide essential back up electricity generation in times of high demand and that it is a cleaner and more efficient source of electricity production compared to conventional electricity power stations. For these reasons, TC afforded this factor significant weight.

1.3.17 The Applicant therefore considers that sufficient weight has been given by TC to the need to reduce the climate footprint of the proposed development and, as highlighted by TC in its LIR and as set out above, current energy policy does recognise the need for significant gas infrastructure of the type proposed by the Applicant.

Consideration of the former Tilbury B Power Station site

1.3.18 Gravesham Borough Council suggests that the Applicant has not fully explored the potential of alternative sites that are located outside of the Green Belt, specifically the former Tilbury B Power Station site owned by RWE Generation UK ("RWE").

1.3.19 As set out below, the Applicant did not give any detailed consideration to the use of this site because (a) it was not available for purchase or use; and (b) the value of the land would have made any energy generation scheme unviable.

1.3.20 A history of the site in question and its intended future use has been helpfully set out by RWE in its written representation submitted at Deadline 2 (REP2-095). In that document, RWE confirms that the Tilbury B Power Station was demolished in 2019, although the site continues to be managed in accordance with an existing Environmental Permit and, RWE submits, remains operational land for the purposes of the Town and Country Planning Act 1990.

1.3.21 At the time of inception of the proposed Thurrock Flexible Generation Plant scheme, RWE had its own plans for energy generation on the site (the Tilbury Energy Centre, which was also an NSIP), although plans for that were withdrawn in November 2018. Nevertheless, RWE confirms at paragraph 3.1 of its written representation that it is retaining the option of the redevelopment of the site, either for nationally significant energy or other proposals. This is reflective of discussions that the Applicant has had with RWE, during which RWE confirmed that the land in question was not available to third parties for development purposes for the foreseeable future.

1.3.22 The land is not available for purchase. Gravesham Borough Council suggests that the site owned by RWE could have been subject to compulsory acquisition by the Applicant for the purpose of locating the Flexible Generation Plant. It is not standard practice for one utility to compulsory acquire another utility's land for the purposes of energy generation: to do so effectively forces the planning system to decide between two proposals for the same site. It is not merely anecdotal that energy promoters do not routinely compulsorily acquire one another's land (and generally, as in this case, seek co-existence where interaction is required) but a reflection of the legal position that both are statutory undertakers. If RWE still has plans for energy proposals then it is inherently unlikely that another electricity undertaker can make a compelling case in the public interest to acquire the site.

1.3.23 As highlighted in Port of Tilbury London Limited's written representation (REP2-096), the RWE site has also been included in the proposal for the Thames Freeport. The Applicant had been made aware of the potential for port-related development on the site and understands that the Port has a right of pre-emption to acquire the RWE site. This would have significantly complicated any potential private agreement as RWE cannot sell this land to the Applicant without first offering it to the Port. This situation also results in the land being unaffordable for energy development, due to its much higher potential value for port-related development in the "no scheme world" in terms of compulsory acquisition compensation. Furthermore, the potential for port development would have been another reason why a compelling case in the public interest for compulsory acquisition would have been difficult to make out.

1.3.24 For these various reasons, it is entirely reasonable that the Applicant did not seek to acquire the RWE site by way of voluntary negotiation or by way of compulsory acquisition. Accordingly, the use of the former Tilbury B Power Station site is not a viable alternative outside of the Green Belt that should have been considered by the Applicant.

1.4 Air Quality

1.4.1 Detailed comments on the matters raised by Gravesham Borough Council in paragraphs 5.4 to 5.12 are provided in the table below.

1.4.2 In summary, the applicant agrees with Gravesham Borough Council that air pollution should be controlled at source. With respect to air quality management areas (AQMAs) designated due to high levels of traffic-source pollution, the dominant source to control is the traffic.

1.4.3 Thurrock Flexible Generation Plant's air pollutant emissions in operation will be controlled at source by its Air Pollution Control (APC) system as regulated by the Environmental Permit, which includes the permitting requirement to apply Best Available Techniques (BAT) for APC.

1.4.4 The flexible generation plant's traffic, in construction or operation, will not travel in or anywhere near Gravesend AQMAs.

Gravesham Borough Council Comment	Thurrock Power Ltd Response
Bureau Veritas (BV) have also reviewed the air quality material where they find that there are some deficiencies in the analysis and a need for further clarification. In particular they say that: • On construction 'it is considered that the conclusion that the change in emissions from construction is 'negligible' is robust and defensible' • However on operation: – "The short-term and long term contour plots do not seem to match results within the tables. There is a conflicting long-term contour plot in Appendix 12.8.	In response to the comments on operation: • The response to ExQ1 acknowledged that mis-match in the short-term and long-term contour plots and those errors were corrected in response to ExQ1, with the correct contours having been provided in supporting document AQ-1 (RE2-044).
– No information around Bias Adjustment or Annualisation of the project specific NO2 monitoring is provided.	• No project-specific NO_2 monitoring results were used for any receptors in Gravesham. For those receptors where project-specific monitoring results were used, in Thurrock, an annualisation factor of 0.99 was used with a bias adjustment factor of 0.87.
– Justification required for choice of diffusion tubes for model verification of construction traffic modelling and why the assessment does not use the modelled concentrations from this study as background for main body of the assessment.	• The assessment does not use the modelled concentrations from the construction impact study as a background. As the council notes, construction phase effects in Gravesham are 'negligible'. Regarding construction phase vehicle emission specifically, the construction traffic is more than 200 m from Gravesham and therefore no construction phase effects would be expected.
– For the additional roads modelling within Gravesham, details of the model verification are not provided and it is stated that 'a ratio has been used as an adjustment factor' and the ratio is not clearly provided.	• Details of the model verification were given in Appendix 12.8 (APP-108), Section 1.2 which provides a comparison of modelled and monitored concentrations in 2018. The ratios used as an adjustment factor for each receptor are shown in the last column of Table 1.2 of Appendix 12.8.
– It is not clear what background concentrations were used for the purpose of the additional Gravesham traffic assessment and the traffic data used in the modelling is not provided.	• The background concentrations and the source of the traffic data are given in Appendix 12.8 Paragraph 1.2.1, which states: "*Traffic data from the Department for Transport (DfT) website for 2018 was used in the roads modelling. The baseline concentrations used are the same as (or the nearest/most representative) the baseline concentrations used by GBC in its 2019 Annual Status Report, Table C.2 – Fall-off Distance Correction (GBC, 2019)"*
– There is no discussion of short-term exceedances in the additional assessment of Gravesham.	• The short-term impacts were considered in Chapter 12: Air Quality (APP-061) and Chapter 25: Cumulative Environmental Assessment, Air Quality (APP-074). Paragraph 2.2.31 of Chapter 25 states: "*For all receptors the cumulative PEC is less than 70% of the AQAL of 200 µg.m^{-3}. This demonstrates that there is considerable headroom between the short-term AQAL and the*

	PEC". As there were no predicted exceedances of the short-term objectives, the discussion in Appendix 12.8 focused on annual-mean concentrations only.
Further advice has been sought from the consultants taking into account the questions posed in ExQ1 to the applicant: 1.1.3, 1.1.4 and 1.5.7. *1.1.13 Explain the adverse impact on air quality at receptor 9* – Gravesend one way system. BV comment that "additional work including modelling of additional receptors around 'Receptor 9' and GR13 (West Street) has been completed by the applicant in appendix 12.8. This additional work confirms that the AQAL is predicted to be exceeded at receptors adjacent to West Street as a result of the development (Paragraph 1.3.11 of Appendix 12.8). This is true in both the 2022 and 2025 modelled scenarios. This is as a result of the effect of traffic emissions and process contribution from the proposed development. Without the development in place the pollutant concentration at these receptors is above 40ug/m3. Given that the sensitivity of the site increases at higher pollutant concentrations, the effect is considered 'moderate adverse'". *1.1.14 Asking the applicant why air quality exceedances in Tilbury and Gravesend have not been addressed in the Environmental Statement*. This comment relates only to the situation in Gravesend. BV comments that "it is our understanding that the effect of the development on air quality has been identified as 'Moderate adverse' in the Environmental Statement at affected sensitive receptors in Gravesend. This has been identified through use of the industry standard IAQM/EPUK Guidance document – 'Land-use planning and development control: Planning for Air Quality'. It is not accepted that, given the evidence provided, the effect is 'not significant' as stated in ES Chapter 12, paragraph 5.1.5." 1.5.7 *Asking the applicant to comment on the exceedance in air quality at point 47* (A227 Wrotham Road in school grounds and at the north west corner of the Mid Kent Golf Course). BV state "it appears that the applicant has used a background concentration close to the AQAL of 38.6µg/m³ based on the concentration monitored at location 'GR57'. This is a 'roadside' monitoring location within the Old Road West Junction AQMA (see footnote 3 for link to map). With the effect of additional roadside and process emissions included, this results in the predicted exceedance of the AQAL at this committed development." There is therefore in the view of the Borough Council that there is a significant air quality issue in West Street, Gravesend as a result of the proposed development. The one-way system round the Town Centre is an Air Quality Management Area already due to impacts of pollution from traffic flow and the impact of built form. The applicant is not responsible for the base conditions, but is for the increment. This is despite the relatively infrequent operation of their facility. This is a matter that should be tackled at source and the Council will discuss the matter with the applicant.	Appendix 12.8 notes that in 2025 concentrations at West Street are predicted to exceed the Air Quality Assessment Level (AQAL) with or without Thurrock FGP. The existing background concentrations and traffic on the Gravesend one-way system (designated in 2005 due to elevated NO_2 levels from traffic) remain the major sources of elevated concentrations at West Street. Para 1.3.1 of Appendix 12.8 describes the small contribution from Thurrock FGP, a predicted NO_2 increase of 0.6 $\mu g.m^{-3}$ at West Street. This is only 1.5% of the AQAL of 40 $\mu g.m^{-3}$ and 1.3% of the cumulative predicted environmental concentration (PEC) of 44.9 $\mu g.m^{-3}$ predicted in 2025 at GR13. The small incremental contribution that is emissions from Thurrock FGP will indeed be controlled at source: an air pollution control (APC) system will be used to control emissions at source to ensure that the emissions limits set out in the Industrial Emissions Directive, and on which the modelling is based on, are met. Regulatory control once operational would be through the Environmental Permitting Regime as outlined in paragraph 2.8.8 of Chapter 2: Proposed Development (APP-045): "*Environmental management of the flexible generation plant will be regulated by the Environment Agency using the facility's Environmental Permit, which will specify operating techniques and will include a regular schedule of audits. The permit will also regulate discharges and emissions from the facility, specifying limits, monitoring and reporting of these. Thurrock Power will implement an ISO14001 or equivalent Environmental Management System (EMS) as required by the Environmental Permit".* Future vehicle emissions are expected to decrease and Appendix 12.8 shows that based on Defra's traffic emission factors, the concentrations at West Street (and at all modelled receptors in Gravesham) are predicted to meet the air quality objective by 2030, with the Thurrock FGP operational.

It is noted that at Appendix 12.3 of the Environmental Statement there is a discussion about the influence of stack heights on emissions and that beyond 50m there are not significant gains. The analysis in Chapter 12 is based on 40m, so the Council would appreciate a determination on whether an increase to 45m or 50m would address the air quality issues or not. There may of course be other ways of achieving the same result but the focus should be at source.	The results of the detailed stack-height modelling in Appendix 12.3 show the most noticeable reductions in ground level concentrations per increase in stack height are achieved up to 35 m, after which the incremental gains begin to level off, with further incremental gains diminishing substantially with increases in height beyond 50 m. If the analysis in the air quality assessment was based on a stack height of 50 m rather than 40 m, the Thurrock Flexible Generation Plant process contribution would be incrementally reduced; however, this would have no material change to the conclusions of Appendix 12.8 as the majority of relevant exceedances of air quality objectives at Gravesend AQMAs are predicted both with and without the Thurrock Flexible Generation Plant development (where, as set out above, traffic emissions are the dominant source and the Thurrock Flexible Generation Plant's contribution is small). The applicant agrees that there are several ways of controlling air pollutant emissions and concentrations, of which appropriate stack height to provide pollutant dispersion is only one: and one where the primary effect is on maximum pollutant concentrations in the immediate vicinity of the source. Other techniques will also be employed, regulated by the Environmental Permit, as has been discussed above. It should be noted that other factors also come into the consideration of appropriate stack height, particularly the visual impact of taller stacks.
One of the unclear matters is what traffic levels assumed in the modelling for the one way system. It is not clear what flow data has been used and whether it reflects recent permissions and forthcoming proposals.	Traffic flow was assumed to remain constant at 2018 levels. Department for Transport traffic data indicates that traffic flows in the area are generally decreasing and this was therefore a reasonable assumption.
The one-way system in Gravesend town centre needs to be subject to ongoing monitoring to find if the issue is significant or if more so require additional measures to be taken. The monitoring would also require logs of when the gas engines run so that it is clear if any deterioration in air quality is as a result of this development or some other cause. The Borough Council would expect to receive copies of such reports and there to be an agreed strategy of what happens is the agreed impacts are breeched [sic].	Monitoring of local air quality is among the responsibilities of the local authority under the Local Air Quality Management (LAQM) system and is routinely undertaken. It is not clear what additional type of monitoring the council is proposing. The applicant does not consider that additional monitoring in Gravesend could be used to determine whether any change in air quality is due to traffic emissions in Gravesham, emissions from Thurrock FGP, or any other background source. The applicant is not aware of such additional monitoring being imposed on equivalent developments and does not accept this as a meaningful, practical or proportionate suggestion.
Point 47 is however in a much more open location with school playing fields to the west, and Mid Kent Golf Course to the south east. The Borough Council would therefore suggest that there probably is not an air quality issue a point 47 but that location GR57 needs to be checked. That is located in an AQMA at a skewed road junction and together with the surrounding built form at this location mean the emissions are not readily dispersed.	Thurrock Power Ltd`s response to EXQ1.5.7 is aligned with the Borough Council`s position on this point, stating: "*At receptor 47 (named 20141214) the cumulative PEC is predicted to be 40.3 µg.m^{-3} or 101% of the AQAL. This is based on using a baseline ambient concentration (AC) of 38.6 µg.m^{-3} obtained from the five year average monitored concentration at monitoring location GR57. The location of GR57 is at the junction of the B251 and the A227, as depicted in Figure 1.3 of Appendix 12.2 Baseline Air Quality Conditions [APP-102]. The A227 is the only major road near to receptor 47 and therefore the baseline AC estimate obtained from GR57 (which will be affected by traffic on both the B251 and the A227) is likely to be higher than the actual baseline AC at receptor 47. On that basis the actual cumulative PEC at receptor 47 is likely to be below 40.3 µg.m^{-3} and the AQAL.*"