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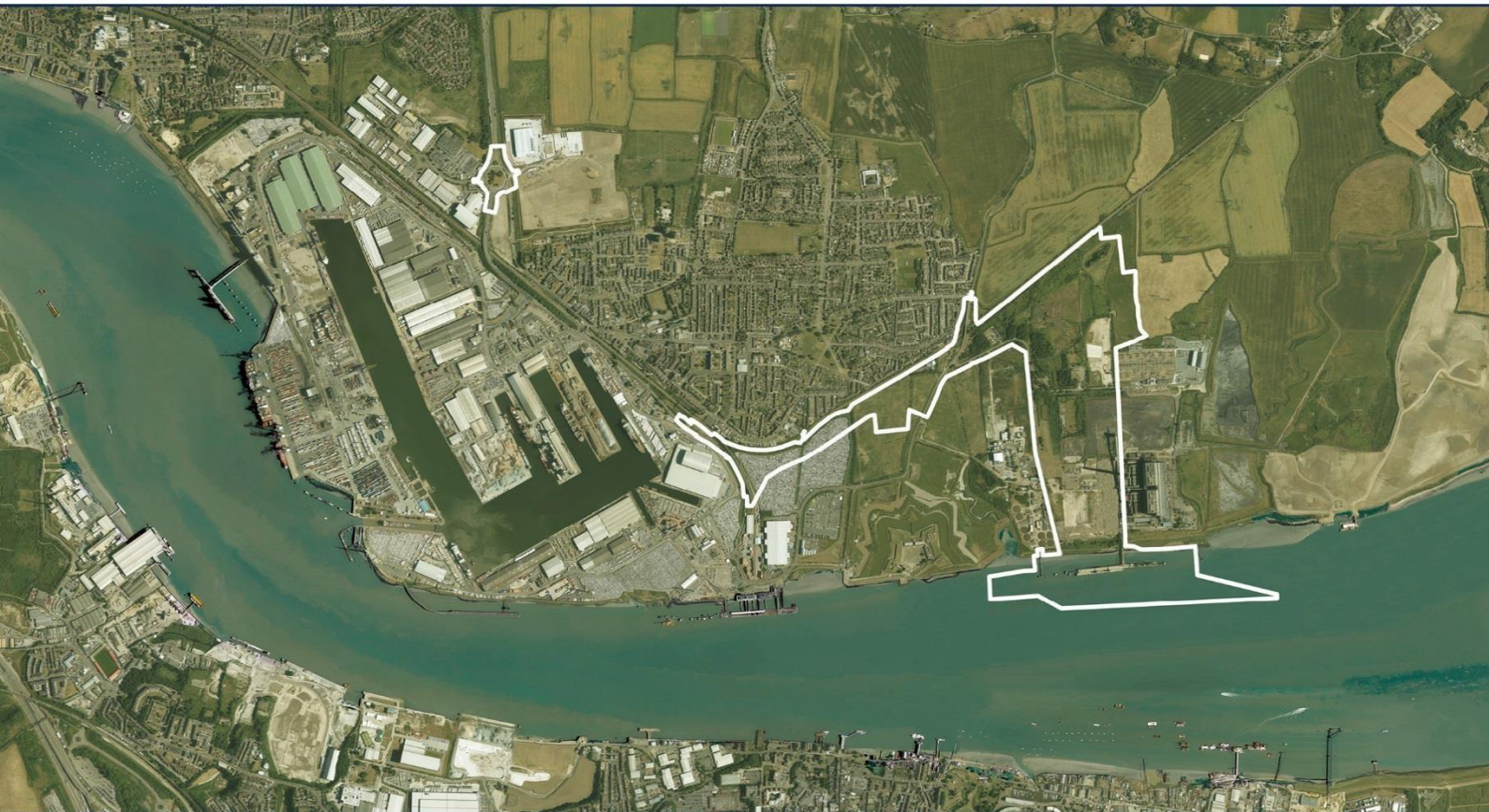
PROPOSED PORT TERMINAL AT FORMER TILBURY POWER STATION

TILBURY2

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NOTE ON THURROCK FLEXIBLE
GENERATION PLANT

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PORT OF TILBURY

PLANNING ACT 2008

**PROPOSED PORT TERMINAL AT FORMER TILBURY POWER STATION
'TILBURY2'**

NOTE ON THURROCK FLEXIBLE GENERATION PLANT

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1.0 INTRODUCTION

- 1.1 On 10 August 2018, PoTLL were advised by PINS that under the Planning Act 2008 (as amended) and The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (the EIA Regulations) – Regulations 10 and 11, a Scoping Consultation had commenced in respect of an application by Thurrock Power Ltd for a proposed Order granting Development Consent for an electricity generating installation known as the Thurrock Flexible Generation Plant (“TFGP”).
- 1.2 The TFGP proposals adjoins the Tilbury2 site. Given both the timing of this submission (6 working days before the end of the Tilbury2 Examination) and the level of information provided within the Scoping Report (for example a lack of any meaningful visualisations of the proposals), PoTLL consider that undertaking even a high level Qualitative Cumulative Effects Assessment of this proposal with Tilbury2 is not possible or appropriate at this point.
- 1.3 However, in order to assist the Examining Authority this note has been prepared by PoTLL to provide some high level comments on the potential interaction of the Tilbury2 proposals with the TFGP. This serves as an addendum to the Qualitative Cumulative Effects Assessment of Tilbury2 with Tilbury Energy Centre and Lower Thames Crossing (REP6-006).
- 1.4 PoTLL would note that the Scoping Report states at para. 6.61 that the Applicant *“has worked closely with Highways England, RWE and Port of Tilbury to consider cumulative effects and mitigation requirements or opportunities (such as landscaping and biodiversity enhancement) afforded by some or all of these developments in conjunction and will continue to do so during the EIA process.”* PoTLL accept that some limited discussions have occurred with the promotor of TFGP, but these have been at a high level regarding solely the interaction of the TFGP proposals and PoTLL's land interests. No detailed discussions have been held between Thurrock Power Limited and PoTLL as to the interaction of the design of the TFGP or its proposed environmental mitigation at this stage.

2.0 DESCRIPTION OF THURROCK FLEXIBLE GENERATION PLANT

- 2.1 The Scoping Report for TFGP¹ indicates that the applicant, Thurrock Power Ltd, proposes to develop a flexible generation plant on land north of Tilbury Substation in Thurrock. The flexible generation plant will provide up to 600 megawatts of electrical generation capacity on a fast response basis when called by the National Grid, together with up to 150 megawatts of battery storage capacity.
- 2.2 Figures 1 to 3 in the Scoping Report show the proposed development location, application boundary and indicative layout of the flexible generation plant. The 'development boundary' does not cross the Tilbury2 site but immediately adjoins its north east corner.
- 2.3 The Scoping Report states that the flexible generation plant will comprise reciprocating gas engines, batteries, and associated electrical and control equipment. The scheme proposes a new permanent access road and potential temporary construction access roads, a gas pipeline connection to the gas national transmission system and potentially a cooling water pipeline to the River Thames.
- 2.4 A preliminary layout for the main development site is shown in Figure 3. The Scoping Report describes that this preliminary layout is subject to change following consultation with stakeholders and ongoing technical and environmental studies, but *“as currently designed shows the expected location and space requirements within the application site of the main development elements - gas engines, batteries, runoff attenuation, substation, and electricity, cooling water and gas connection points - responding to currently known site constraints.”* (para. 3.8).
- 2.5 There is clearly a considerable degree of uncertainty as to the form of the proposals and *“due to the ongoing need for flexibility to accommodate further technical developments, the applicant will also seek to use a Rochdale Envelope approach in the EIA process.”* (para. 3.10). Table 3.2 provides an envelope of development which includes items such as gas engines *“up to 60 units contained within four purpose-built buildings, each building being up to around 50 m by 125 m and 15 m high (including top-mounted cooling)”* and up to 60 *“Gas engine stacks”* of each up to 40 m high. The Scoping Report explains that the envelope would be refined wherever greater certainty about the design of elements of the proposed development is possible.
- 2.6 As well as the lack of design detail there are uncertainties around the technology to be utilised, including the cooling of the gas engines. The Scoping Report explains that these are provided with air cooling heat exchangers with fans likely to be mounted above each of the engines or on the ground if space permits (3.24) but that the option of 'once through' cooling water as an alternative to air cooling is being considered (3.25).

¹ EIA Scoping Report Thurrock Flexible Generation Plant Land Adjacent to National Grid Substation, Tilbury for Thurrock Power Limited, RPS, July 2018

- 2.7 The access arrangements are still being considered (3.30 – 3.36) albeit none of these interact with the Tilbury2 proposals.
- 2.8 The Scoping Report sets out the following construction period for the TFGP:
- Q1 2021: main development site preparation and ground works, creation of construction access road and widening of pinch points on public highway, start of gas and (potentially) cooling water pipeline trenching (subject to potential seasonal constraints);
- Q2 2021: construction/installation of gas engines, batteries and associated equipment; connection of gas supply pipeline and electricity export cable(s); (potentially) construction and connection of cooling water pipeline;
- Q3 2021: commissioning and energisation; completion of landscaping and permanent access road(s);
- Q4 2021: facility is available for operation.
- 2.9 Accordingly, there will be limited, if any, temporal overlap in the anticipated construction programmes of Tilbury2 with TFGP. As set out in the Tilbury2 Environmental Statement (paragraphs 5.126 and 5.127 (AS-006), Tilbury2 would become operational with the opening of the RoRo terminal in Q1 2020. Construction on-site for the remainder of the terrestrial works including the CMAT would continue for another 12 months (i.e. Q1 2021). Assuming construction of TFGP commences at the earliest Q1 2021, all of the main construction activities related to the Tilbury2 proposals (in particular the new lengths of highway and rail line, all maritime infrastructure, and the grading and laying of appropriate pavements across the site) will be complete and the RoRo terminal, and quite possibly the full extent of the CMAT, will be operational.
- 2.10 PoTLL consider that the time line set out by the applicants for the TFGP is highly optimistic considering no statutory consultation has been undertaken and the level of environmental information provided in the Scoping Report, combined with the need to participate in the competitive Capacity Market auction process. As such, there are unlikely to be cumulative construction environmental effects between Tilbury2 and TFGP due to construction activities being undertaken for both projects at the same time.
- 2.11 The construction period for TFGP is more likely to overlap with that for TEC should both schemes gain permission and come forward as planned by their respective promoters. As set out in our CEA of the project [REP6-006] it is assumed that construction of TEC project would commence at the earliest in Q2 or Q3 2021; this would therefore be under construction at the same time as TFGP. Mobilisation of construction for LTC could also take place in 2021 (although could slip by one year if private funding is required - SR on LTC, para. 2.1.4). There is therefore a possibility that TFGP, TEC and LTC could be under construction at the same time; but by that time, Tilbury2 will be substantially completed.

3.0 COMMENTARY

Approach to Cumulative Effects Assessment

- 3.1 The extent of information available within the Scoping Report for TFGP is limited. It is on this basis that PoTLL consider that qualitative and quantitative assessment of cumulative effects of the project with Tilbury2 will necessarily be undertaken by the promoter of the TFGP and that it is inappropriate and indeed not possible for PoTLL to undertake such an assessment at this stage.
- 3.2 The Scoping Report states that the potential for cumulative impacts with several other nearby major infrastructure projects that are in the process of applying for development consent has been identified and will be assessed in the EIA. These include Tilbury2, the Lower Thames Crossing and the Tilbury Energy Centre. PoTLL consider this to be the correct approach.
- 3.3 The TFGP promoter will need to develop and design a scheme that is relevant NPS compliant (NPSs EN-1, 2 and 3) and meets legislative and regulatory tests and requirements. The extent to which any cumulative effects arise will depend on both the final design of the project and any mitigation proposed by the promoter both during construction and operation. Indeed, it remains uncertain as to whether or when the proposal will be brought forward at this early stage as it is neither the subject of an application nor has statutory consultation been undertaken.
- 3.4 Moreover, as was set out in PoTLL Qualitative CEA of LTC and TEC, given the limited knowledge of the design and environmental mitigation which will form part of the TFGP at this stage, it is not the responsibility of the Tilbury2 project to mitigate potential cumulative effects with TFGP and it would not be possible to design such mitigation before the detail of that scheme is known. Requiring any additional mitigation as part of Tilbury2 to pre-empt this future scheme would be unnecessary and unreasonable.
- 3.5 TFGP, along with both LTC and TEC, require development consent under the Planning Act 2008, and it is undoubtedly EIA development. Accordingly, the environmental impacts of all three of those schemes will fall to be assessed and considered by the relevant decision-makers as and when applications are progressed. All three have identified in their respective Scoping Reports that Tilbury2 is a cumulative project that will be assessed as part of their Environmental Assessment process. By the time these applications are considered through the DCO process, the Tilbury2 DCO may well have been made; if the decision was still to be made, all necessary detail of the Tilbury2 proposals will in any event be available to the promoters of those schemes. This will allow these future proposals to fully take account of the detailed design of Tilbury2, any on-going monitoring, and the associated proposed mitigation. This will ensure that potential cumulative effects will be quantified at the appropriate point and will allow for appropriate design and mitigation strategies (in the following projects) to address cumulative effects if these are indeed identified once the detail of these future proposals is known.

Observations on possible cumulative effects to be considered by TFGP

- 3.6 The following paragraphs set out the environmental effects that the promotor of TFGP will need to consider on a cumulative basis with Tilbury2, LTC and TEC.

Construction impacts

- 3.7 From the information available to date (as described above) there will be only limited if any potential overlap in the construction period of Tilbury2 with TFGP.
- 3.8 The Tilbury2 infrastructure corridor, the laying out of the RoRo Terminal and all marine works will be completed by the end of 2020 when the operation of the RoRo terminal commences, prior to the earliest anticipated construction commencing on TFGP. Whilst construction of the CMAT will continue through 2021 and would potentially overlap with TFGP the extent of engineering works at Tilbury2 will be reducing during this period.
- 3.9 As such, adding the Tilbury2 construction works during 2021 to the enabling works at TFGP is unlikely to result in significant effects.

Socio-Economics

- 3.10 The four projects will cumulatively create a sustained period of construction. This could have both positive and adverse effects on socio-economic outcomes, in terms of job creation, skills and training opportunities, and potential stresses on existing infrastructure and community networks. The local demographic profile is expected to be affected by the proposal, particularly if additional employees move to the study area.

Health

- 3.11 The potential prolonged construction period (even though significant construction at Tilbury2 will be completed prior to commencement at TFGP, LTC or TEC) could have both physical and psychological health impacts on local communities.
- 3.12 The cumulative impact of all four projects once operational on health would need to be considered further once more detail on aspects such as air quality and noise are known.

Landscape Character and Visual Amenity

- 3.13 TFGP will create further change in the local landscape with Tilbury2, TEC and LTC, as such the cumulative effect on local landscape character could be of increased significance within the Tilbury Marshes character area. These schemes having been constructed would likely require a reassessment of this character area by Thurrock Council to better reflect what will be increasingly urban/urban fringe characteristics.
- 3.14 The combined sight and sound of the four projects could have an overall effect of increased significance on scenic quality and tranquillity. The area where this effect would likely be most marked is broadly defined by the rural

extents of the West and East Tilbury Marshes, including the north bank of the Thames as well as the eastern reaches of the Chadwell Escarpment.

- 3.15 The combined effect of TFGP with Tilbury 2, TEC and LTC could affect cultural heritage value associated with the SAM's of Tilbury Fort, New Tavern Fort and Coalhouse Fort. Being to the east of Tilbury2, the TFGP could increase the presence of industry in the far distance from Coalhouse Fort, adding to TEC and LTC if this were visible and audible in the middle distance (if a link to Tilbury were constructed). The cumulative impacts of all four schemes on leisure and tourism value would need to be considered further once the detail of TFGP is known, albeit it does not appear that any public rights of way are directly affected. In terms of visual amenity, the combined effects of all four projects would be experienced in views from the east and north-east that take in the TEC site and the TFGP (that would be prominent and consolidate the presence of industry at Tilbury2). From the east the effect could be substantial in close views but slight in more distant views such as Coalhouse Fort. From the south (when viewed from Gravesham), the cumulative effects of four schemes could be greater depending on how TFGP is viewed in relation to TEC.
- 3.16 The cumulative effect of artificial lighting would increase when Tilbury2, TFGP, TEC and LTC schemes are all operational.

Ecology

- 3.17 In terms of ecology, the Thurrock Flexible Generation Plant (TFGP) proposals have the potential to interact with impacts from the Tilbury2 project mainly by virtue of geographical proximity and the interconnection between certain habitat and species receptors. In particular, the site proposed for the TFGP itself is subject to a draft Local Wildlife Site designation (LoWS) (although this does not appear to have been identified in the scoping report), and is known to support semi-improved coarse grassland and relict grazing marsh habitats of confirmed value for reptiles and (in the boundary ditches) water voles, and with likely value for ground nesting and scrub birds, badgers and species from the nationally significant invertebrate assemblage associated with the power station area generally, potentially including Priority species such as hornet robberfly. Thus, further impacts on such resources could arise from the TFGP with additional consequences for local metapopulations over and above those arising from Tilbury2 alone and/or Tilbury2 cumulatively with the TEC and LTC.
- 3.18 Less likely to give rise to significant cumulative effects with Tilbury2, but more likely to give rise to such effects in combination with TEC and/or LTC are the ancillary elements of the TFGP project, particularly those involving land east of the power station site and through Goshems Farm area and which appears from the scoping report to have had little survey coverage and certainly less than the main site. Amongst other things the scoping report for TEC identifies the presence of high tide roosts of intertidal birds in this area suggestive of functional linkage to the Thames Estuary and Marshes SPA and Thames Estuary and Marshes Ramsar Site. There is also the suggestion that marine works and works below MHWS will be required in an area known to harbour significant concentrations of intertidal birds with possible additional implications for intertidal habitats functionally

linked to the SPA and Ramsar Site and key species that use them. This is not identified in the scoping report for TFGP but will clearly be a relevant consideration for the assessment of the project when the proponents come to carry out their CEA and in-combination HRA.

Archaeology

- 3.19 Construction works at TFGP, TEC and LTC could have an adverse effect on the potential buried archaeological and palaeoenvironmental resource which would be in addition to that assessed for Tilbury2. It is anticipated that a suitable strategy for each project would be agreed to avoid, minimise, manage and mitigate against this potential impact.
- 3.20 Through the successful implementation of the appropriate mitigation measures, it is considered likely that adverse cumulative effects on archaeological resource would be able to be avoided with potentially a beneficial residual effect.

Built Heritage

- 3.21 The combination of effects on built heritage from Tilbury2, TFGP, TEC and LTC will be greater than any of the individual projects but will to a large degree depend upon the mitigation allied to TFGP, TEC and LTC, for which no information is available.
- 3.22 The most sensitive asset – Tilbury Fort – and its setting will be affected by all four proposals. Coalhouse Fort, also a Scheduled Monument, could also be more acutely affected by the LTC, TEC & TFGP proposals. The TFGP, allied with the other projects, will need to consider how this is mitigated.

Land-Side Transport

- 3.23 The TFGP Scoping Report notes (paragraph 8.5.3) that operational traffic would be negligible and is scoped out. Hence in terms of traffic any cumulative effect will only arise due to the construction traffic once Tilbury2 is operational.
- 3.24 No assessment of the construction traffic is available for TFGP. The lack of detail provided in the TFGP Scoping Report means it is not possible to estimate a broad guide of construction traffic. It is therefore not possible to undertake a cumulative assessment.
- 3.25 However, it is worth noting that the TFGP Scoping Report states that the route for construction traffic would be via local roads to the north of the site connecting with the A13 at the Orsett Cock junction (paragraph 3.3.1). This is a different local route to that used by Tilbury2 traffic. Accordingly, the cumulative effects would be confined to the A13. It is also worth noting that the construction is predicted to last 12 months.

Hydrogeology and Ground Conditions

- 3.26 Through the successful implementation of appropriate good practice mitigation measures during the construction and operational phases, there

should not be any significant cumulative effects for the TFGP, LTC, TEC and the Tilbury2 projects in relation to hydrogeology and ground conditions.

Water Resources and Flood Risk

- 3.27 There are a number of potential combined cumulative effects due to TFGP, TEC and LTC which could impact on the water environment without appropriate design in these schemes and appropriate mitigation measures. This includes increased risk of flooding, increased surface run-off, pollution associated with discharge of process water, spills and leakages during operational periods. Although the magnitude and significance of the effects is currently unknown due to the limited information available on the schemes, it is considered that with the appropriate good practice approach to design and mitigation measures in place the combined effects are unlikely to be significant.

Noise

- 3.28 It is not anticipated that there will be any significant cumulative effects of TFGP with Tilbury2 during construction. As described above there is likely to be limited overlap between the construction phases of Tilbury2 with those of the TFGP proposal. In operation, the Scoping Report for TFGP indicates that noise generating plant items such as the gas engines, inverters, transformers, air coolers/conditioning units and substations have the potential to result in noise impacts. These will need to be considered cumulatively with the operation of Tilbury2, TEC and LTC.

Air Quality

- 3.29 It is not anticipated that there will be any significant cumulative effects of TFGP with Tilbury2 during construction. As described above there is likely to be limited overlap between the construction phases of Tilbury2 with those of the TFGP proposal. However, it is necessary to ensure that any dust emissions of all four proposals both individually and in combination are adequately mitigated through project CEMPs, which will be secured by the respective DCOs.
- 3.30 Once operational, the maximum ground-level concentrations from TFGP stack emissions may overlap with TEC and with the LTC new road network (if a link road to Tilbury is included), which may be used by Tilbury2 land-side transport. If significant effects are identified, then appropriate mitigation would need to be developed such as reconsideration of stack height and/or route alignment. Although the magnitude of the effects is currently unknown due to the limited information available on the schemes, on the basis of the low existing baseline concentrations in the relevant area, the combined residual effects are unlikely to be significant in relation to health protection objectives and limit values.

Waste and Materials

- 3.31 The waste arisings from all four projects are not known but in combination will be much greater than that assessed for Tilbury2. Each project will need to adhere to the principles of the waste hierarchy and, given the timelines

involved, consider waste capacity at the time those arisings occur. There will be some cumulative impact on waste capacity (since the waste arisings from TFGP, TEC and LTC will follow those from Tilbury2) but the significance of this cannot be determined without knowing the arisings (particularly from LTC which could be significant) or the capacity that would exist at that time. As established by the assessment undertaken by PoTLL for the Tilbury2 project, waste capacity in Thurrock is more limited than in the wider Essex area, and therefore the impacts on this capacity from these future projects could be more significant.

4.0 CONCLUSIONS

- 4.1 This note provides some initial comments by PoTLL on the potential for cumulative impacts of the Thurrock Flexible Generation Plan (TFGP) which is presently the subject of scoping consultation. It should be considered as an addendum to the Qualitative Cumulative Effects Assessment of Tilbury2 with Tilbury Energy Centre and Lower Thames Crossing (REP6-006).
- 4.2 In broad terms, a number of environmental effects of the TFGP could interact with Tilbury2 and also with LTC and TEC. If all four were indeed permitted, this interaction could have the potential to increase the level of environmental effect.
- 4.3 However, the extent of such cumulative effects will depend on both the final designs of the TFGP, TEC and LTC (which will clearly need to be designed to avoid and minimise their environmental effects) and any mitigation proposed by the promoters of those schemes both during construction and operation.
- 4.4 The TFGP Scoping Report confirms that the EIA process for TFGP will conduct a CEA that will consider all four projects – this is the appropriate approach to be taken to the assessment of cumulative effects arising from this project and Tilbury2.