Thurrock Flexible Generation Plant

Environmental Statement Volume 4: Cumulative Effects Assessment
Chapter 23: Traffic and Transport

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Environmental Impact Assessment

Cumulative Effects Assessment

Volume 4

Chapter 23

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Prepared by: Charles Montgomerie

Checked by: David Archibald

Thurrock Power Ltd

1st Floor

145 Kensington Church Street

London W8 7LP

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1. Introduction and Approach

1.1 Purpose of this chapter

1.1.1 This chapter of the Environmental Statement (ES) provides a cumulative assessment of the Traffic and Transport effects of the proposed Thurrock Flexible Generation Plant together with other relevant future development projects that have been scoped into the cumulative assessment. The effects of the proposed development on traffic and transport on its own are set out in Volume 3, Chapter 10: Traffic and Transport.

1.1.2 In particular, this cumulative effects assessment (CEA) topic chapter:

- identifies the potential impact interactions of the proposed development in combination with other relevant future development projects;
- identifies the receptors with the potential to be significantly affected by these potential interactions and characterises these receptors, including their sensitivity and any relevant environmental thresholds;
- evaluates the likely significant cumulative effects on these key receptors as a result of the proposed development together with other development projects;
- identifies any additional mitigation measures that are proposed to prevent, minimise, reduce or offset these significant cumulative effects; and
- taking into account any proposed mitigation measures, evaluates the significance of predicted residual cumulative effects.

1.1.3 There are other environmental topic areas that have relevance to aspects considered in this chapter, namely Volume 3, Chapter 11: Noise and Vibration and Chapter 12: Air Quality. The specific assessment of potential cumulative effects of these other environmental topics are provided in the relevant chapters of Volume 4, Chapter 24 and Chapter 25 respectively.

1.2 Approach to cumulative assessment

1.2.1 The assessment of Traffic and Transport cumulative effects follows the approach set out in Section 3 of Volume 2, Chapter 4: EIA Methodology.

1.3 Study area

1.3.1 Abnormal Indivisible Loads (AILs) have been considered in relation to the weight and dimensional limitations on sections of the public highway and the Station Road railway level crossing. The preferred solution is to deliver AILs via a new causeway from the Thames foreshore in the vicinity of the former Tilbury B Power Station (land owned by RWE) direct into the site, full details of which are set out in Volume 2, Chapter 2: Project Description.

1.3.2 The applicant has considered potential construction access and traffic routes and the constraints associated with each. Construction vehicles comprising cars and HVs would route from the A13 via the A1089 through the ASDA roundabout (the five-arm roundabout north of Tilbury Docks) and into the site via the newly realigned A1089 / Fort Road to Tilbury2 access. Some HGVs may deliver from the Port of Tilbury and these HGVs would utilise the last part of the same road network as above. A secondary access for exceptional circumstances if the Fort Road Access is unavailable temporarily for any reason is proposed on Station Road via Fort Road and Coopers Shaw Road.

1.3.3 Away from the main facility, access will be provided to the gas compound and an approximate 1.25 km length of gas pipeline on Station Road at East Tilbury, as described in Volume 2, Chapter 2: Project Description.

1.3.4 The study area comprises of the route from the M25 junction 30 to the Station Road access at East Tilbury via the A13, A1089, Fort Road and Coopers Shaw Road which covers all of the highway links that will be used along the access route.

1.3.5 The access route to the site for day to day vehicles from Junction 30 of the M25 is shown on Figure 1.1 in Volume 6, Appendix 10.1: Transport Assessment. These highway links form the study area of this chapter.

1.4 Screening of cumulative developments

1.4.1 Volume 4, Chapter 18: Cumulative Effects Assessment Introduction and Screening identifies a short-list of potential cumulative developments that have been screened as potentially relevant to the CEA overall (i.e. for one or more topic areas). From this shortlist of cumulative development projects, Table 1.1 identifies those projects that fall within the zone of influence for Traffic and Transport and have potential for cumulative effects that require assessment in this topic area.

1.4.2 Developments have been shortlisted in Table 1.1 where:

- the conclusions of the environmental assessments for those developments predicted significant effects on receptors within the zone of influence for the proposed Thurrock Flexible Generation Plant development; or
- there is considered to be potential for effects that were not predicted to be significant for those individual developments but that may become significant in the cumulative scenario; or
- environmental studies for those developments have not been published but there is sufficient information available about the development to both indicate the potential for cumulative effects and allow assessment.

1.4.3 Where sufficient information about a development to consider its potential for cumulative effects was not publicly available, the development has not been shortlisted.

1.4.4 Table 1.1 has shortlisted the cumulative development sites where there is potential for a cumulative impact during the construction phase and lists the receptors affected by each development.

1.4.5 There will be only low levels of traffic generated by the proposed development during the operational phase, as detailed in the assessment in Volume 3, Chapter 10: Traffic and Transport. No significant effects resulting from the operation of the proposed development alone are anticipated. The level of operational traffic generated by the proposed development is sufficiently negligible that, upon review of transport impacts of the relevant cumulative developments listed in Table 1.1, it is clear that no significant contribution by Thurrock Flexible Generation Plant traffic in operation to any cumulative effect is possible. Therefore, the operational and maintenance phase has been scoped out from further assessment.

Table 1.1: Shortlist of relevant cumulative developments.

ID	Development	Receptor(s) affected
58	The Lower Thames Crossing will be a new road connecting Essex and Kent. Located east of Gravesend and Tilbury, this new crossing will offer the improved journeys, new connections and network reliability, and economic benefits that only a new, alternative crossing, away from Dartford, can provide.	A13 between M25 junction 30 and A126 A13 between A126 and A1012 A13 between A1089 and A1012 A1089, between Marshfoot Road roundabout and A13 Coopers Shaw Road / Church Road / Station Road, between Gun Hill Road and EMR East Tilbury junction A13, between Orsett Cock roundabout and A1089 A1089 Dock Approach Road, between Marshfoot Road roundabout and ASDA roundabout A1089 St Andrews Road, between ASDA Roundabout and Port of Tilbury Gate 1 A1089 St Andrews Road, between Tilbury Gate 1 and Proposed Tilbury 2 Road Proposed Tilbury 2 Road, between A1089 St Andrews Road and Fort Road Fort Road between Proposed Tilbury 2 Road and Brennan Road Fort Road between Brennan Road and Coopers Shaw Road Station Road East Tilbury
60	Outline approval (with all matters reserved, except for access) sought for: up to 2,158 dwellings comprising a mix of 1, 2, 3-bedroom units (Use Class C3); a serviced plot for a new primary / nursery school up to 1,850 sq.m; a health centre up to 1,000 sq.m (Use Class D1); community pavilion of up to 500 sq.m (Use Class D1); convenience retail store up to 400 sq.m (Use Class A1); public art together with associated vehicle parking, open space, landscape and public realm provision, ecological mitigation, highways, pedestrian and vehicular access routes, and other associated engineering, utilities and infrastructure works. Detailed approval sought for: 342 dwellings (Use Class C3) comprising a mix of 1, 2, 3-bedroom units; linear park; a lido facility with changing room facilities up to 340 sq.m (Use Class D1) and ancillary café up to 100 sq.m (Use Class A3); 3km of mountain bike routes and a pump track, a pedestrian / cycle link tunnel from Lakeside Shopping Centre underneath the A1306, and vehicular access from the A126, A1306 and MSA roundabout (bus / emergency).	A13 between M25 junction 30 and 126 A13 between A126 and A1012 A13 between A1089 and A1012 A13 between Orsett Cock roundabout and A1089
63	Outline planning permission with all matters (except for access) reserved for the demolition, phased remediation and redevelopment of 167 hectares of former Coryton Oil Refinery to provide up to 480,000 sq. m of commercial development including a Food Park (Use Class B2/B8); Energy & Waste related facilities (Use Class Sui Generis/B2/B8); A Central Hub incorporating a range of active uses (office, leisure, education, hotel and conferencing facilities) (Use Classes B1; D1; D2; C1) and ancillary retail/leisure/community facilities (Use Classes A1, A3, A4, A5, D2 & Sui Generis), as well as additional land set aside for a Rail Freight Terminal; 4.1 Hectares of Open Storage (Use Class B8); Lorry Parking Facilities; structural landscaping; car parking, new road and access facilities; vehicular crossing over Shellhaven Creek; pedestrian crossing facilities to existing and proposed estate roads; retention of existing jetties; and associated infrastructure works.	A13 between M25 junction 30 and 126 A13 between A126 and A1012 A13 between A1089 and A1012 A1089 between Marshfoot Road roundabout and A13 A13, between Orsett Cock roundabout and A1089 A1089 Dock Approach Road, between Marshfoot Road roundabout and ASDA roundabout
76	Request for Environmental Impact Assessment (EIA) Screening Opinion: Proposed development of c.600 dwellings and associated in infrastructure, including access and relief road.	A13 between M25 junction 30 and 126 A13 between A126 and A1012 A13 between A1089 and A1012 A13, between Orsett Cock roundabout and A1089

ID	Development	Receptor(s) affected
78	Request for Environmental Impact Assessment (EIA) Screening Opinion and Outline Application - Proposed construction of up to 161 new dwellings (C3) with vehicular access from Churchill Road; construction of 7,650 sqm (GEA) of flexible employment floorspace (B1c/B2/B8) with vehicular access from Thurrock Park Way; provision of open space including landscaping and drainage measures; new pedestrian/cycle links; and associated parking and access.	A13 between M25 junction 30 and A126 A13 between A126 and A1012 A13 between A1089 and A1012 A1089 between Marshfoot Road roundabout and A13 A13, between Orsett Cock roundabout and A1089 A1089 Dock Approach Road, between Marshfoot Road roundabout and ASDA roundabout
81	Tilbury Green Power Phase 2 S36C application. Biomass and energy from waste fuelled generation station at Tilbury Docks, Essex: variation application under section 36c of the electricity act 1989.	A13 between M25 junction 30 and A126 A13 between A126 and A1012 A13 between A1089 and A1012 A1089 between Marshfoot Road roundabout and A13 A13 between Orsett Cock roundabout and A1089 A1089 Dock Approach Road, between Marshfoot Road roundabout and ASDA roundabout A1089 St Andrews Road, between ASDA Roundabout and Port of Tilbury Gate 1
82	Gateway Energy Centre: Development up to 1250 MW capacity to comprise either: up to two CCGT units; or one CCGT unit and one or more OCGT units and/or battery energy storage	A13 between M25 junction 30 and 126 A13 between A126 and A1012 A13 between A1089 and A1012 A13 between Orsett Cock roundabout and A1089

1.5 Identifying cumulative developments affecting each receptor

1.5.1 Table 1.2 summarises the developments that have the potential to cause cumulative effects at each identified receptor, the sensitivity of the receptor to cumulative impacts, and the predicted residual effect of Thurrock Flexible Generation Plant during construction (as established in ES Volume 3).

1.5.2 All links have a standalone effect of negligible for the Thurrock Flexible Generation Plant, with the exception of Station Road East Tilbury which has a minor adverse effect (not significant in EIA terms).

Table 1.2: Summary of cumulative developments affecting each receptor (construction).

Receptor affected	Sensitivity of receptor to cumulative effects	Standalone effect of Thurrock Flexible Generation Plant on receptor	Cumulative development(s) with the potential to affect this receptor
A13 between M25 junction 30 and A126	Negligible	Negligible	All
A13 between A126 and A1012	Negligible	Negligible	All
A13 between A1089 and A1012	Negligible	Negligible	All
A1089, between Marshfoot Road roundabout and A13	Negligible	Negligible	63, 78, 81
Coopers Shaw Road / Church Road / Station Road, between Gun Hill Road and EMR East Tilbury junction	Low	Negligible	58
A13, between Orsett Cock roundabout and A1089	Negligible	Negligible	All
A1089 Dock Approach Road, between Marshfoot Road roundabout and ASDA roundabout	Low	Negligible	63, 78, 81
A1089 St Andrews Road, between ASDA Roundabout and Port of Tilbury Gate 1	Low	Negligible	81
A1089 St Andrews Road, between Tilbury Gate 1 and Proposed Tilbury 2 Road	Low	Negligible	58
Proposed Tilbury 2 Road, between A1089 St Andrews Road and Fort Road	Negligible	Negligible	58
Fort Road between Proposed Tilbury 2 Road and Brennan Road	Low	Negligible	58
Fort Road between Brennan Road and Coopers Shaw Road	Low / Negligible	Negligible	58
Station Road East Tilbury	Low	Minor	58

2. Assessment of Cumulative Effects

2.1 Construction phase of Thurrock Flexible Generation Plant

Lower Thames Crossing

2.1.1 The Lower Thames Crossing NSIP development is proposed on land adjacent to and in some cases overlapping with the Thurrock Flexible Generation Plant application boundary to the west, north and south. The application is expected to be submitted to the planning inspectorate during Summer 2020.

2.1.2 The Lower Thames Crossing will substantially change the surrounding highway network and will substantially change the number of vehicle movements on links assessed. The construction traffic for the average and peak construction scenarios for the Thurrock Flexible Generation Plant application are minimal compared to the significant changes in the patterns of traffic flows should the Lower Thames Crossing be brought forward. It is also unlikely that the Lower Thames Crossing will affect the links assessed for this application in the assessment year of 2022.

2.1.3 Should the construction period traffic generation of Thurrock Flexible Generation Plant overlap temporally with that of the Lower Thames Crossing, it is considered that Thurrock Flexible Generation Plant would make no appreciable contribution to the significant effects of the Lower Thames Crossing as assessed in its Preliminary Environmental Impact Report (PEIR) and consequently no significantly greater cumulative effect is predicted.

Other cumulative developments

2.1.4 The estimated traffic generation from the cumulative developments have been taken from their respective transport document submissions, as set out in the Volume 6, Appendix 10.1: Transport Assessment. These have then been added to the Thurrock Flexible Generation Plant construction traffic flows and assessed against the baseline traffic flows. The resultant cumulative plus average construction and cumulative plus peak construction percentage impacts are calculated in Table 2.1 and Table 2.2 respectively.

2.1.5 Only links where there are cumulative development traffic flows are assessed in this CEA. The other links are assessed in the Transport ES chapter.

2.1.6 The methodology for the cumulative development flows is set out in Section 5 of Volume 6, Appendix 10.1: Transport Assessment.

Table 2.1: Average Construction + Cumulative Development Flows.

Link	Link Description	2022 Baseline		Average Construction + Cumulative				2022 Baseline + Average Construction + Cumulative	
		AADT	HV AADT	AADT	Percentage Impact AADT	AADT HVs	Percentage Impact AADT HVs	AADT	AADT HVs
1	A13 between M25 junction 30 and A126	132736	17487	3420	2.58%	932	5.33%	136156 (170)	18419 (83)
2	A13 between A126 and A1012	110772	16744	3420	3.09%	932	5.56%	114191 (170)	17675 (83)
3	A13 between A1089 and A1012	114614	16382	3420	2.98%	932	5.69%	118033 (170)	17395 (83)
4	A1089, between Marshfoot Road roundabout and A13	37249	11960	905	2.43%	415	3.47%	38155 (170)	12457 (83)
15	A13, between Orsett Cock roundabout and A1089	102630	10220	3516	3.43%	936	9.16%	106146 (170)	11237 (83)
16	A1089 Dock Approach Road, between Marshfoot Road roundabout and ASDA roundabout	42502	12112	905	2.13%	415	3.43%	43407 (170)	12609 (83)
17	A1089 St Andrews Road, between ASDA roundabout and Port of Tilbury Gate 1	18521	9640	630	3.40%	383	3.97%	19151 (170)	10104 (83)

Thurrock Flexible Generation Plant traffic flows are shown in brackets

Table 2.2: Peak Construction + Cumulative Development Flows.

Link	Link Description	2022 Baseline		Peak Construction + Cumulative				2022 Baseline + Peak Construction + Cumulative	
		AADT	AADT HVs	AADT	Percentage Impact AADT	AADT HVs	Percentage Impact AADT HVs	AADT	AADT HVs
1	A13 between M25 junction 30 and A126	132736	17487	3536	2.66%	1013	5.79%	136272 (286)	18500 (164)
2	A13 between A126 and A1012	110772	16744	3536	3.19%	1013	6.05%	114307 (286)	17757 (164)
3	A13 between A1089 and A1012	114614	16382	3536	3.08%	1013	6.18%	118149 (286)	17395 (164)
4	A1089, between Marshfoot Road roundabout and A13	37249	11960	1021	2.74%	496	4.15%	38271 (286)	12457 (164)
15	A13, between Orsett Cock roundabout and A1089	102630	10220	3632	3.54%	1017	9.95%	106262 (286)	11237 (164)
16	A1089 Dock Approach Road, between Marshfoot Road roundabout and ASDA roundabout	42502	12112	1021	2.40%	496	4.10%	43523 (286)	12609 (164)
17	A1089 St Andrews Road, between ASDA roundabout and Port of Tilbury Gate 1	18521	9640	746	4.03%	464	4.82%	19267 (286)	10104 (164)

Thurrock Flexible Generation Plant traffic flows are shown in brackets

2.1.7 In terms of total vehicle flows, none of the links exceed their respective threshold (Rule 1 or Rule 2) (Institute of Environmental Assessment (IEA), 1993).

2.1.8 As can be seen, the daily percentage increases in traffic flows along all above links are no more than 3.40% for total vehicles and 9.16% for HVs for the average construction period. These maximum impacts are located at A1089 St Andrews Road, between ASDA roundabout and Port of Tilbury Gate 1 and A13, between Orsett Cock roundabout and A1089 respectively. Such increases do not exceed the Rule 1 threshold set out in the IEA (1993) Guidelines and the impact is therefore negligible and can be screened out of the assessment.

2.1.9 During the peak construction period, the daily percentage increases in traffic flows along all above links are no more than 4.03% for total vehicles and 9.95% for HVs. These maximum impacts are located at A1089 St Andrews Road, between ASDA roundabout and Port of Tilbury Gate 1 and A13, between Orsett Cock roundabout and A1089 respectively. Such increases do not exceed the Rule 1 threshold set out in the IEA (1993) Guidelines and the impact is therefore negligible and can be screened out of the assessment.

2.1.10 In accordance with the IEA (1993) Guidelines the sensitivity of receptors along all above links are considered to be **low** / **negligible** and the magnitude of impact is deemed to be **negligible**. The effect is therefore considered to be **negligible** along all links, which is not significant in EIA terms.

2.2 Operation and maintenance phase of Thurrock Flexible Generation Plant

2.2.1 There will be only low levels of traffic generated by the proposed development during the operational phase and an assessment of this has been scoped out.

2.3 Decommissioning phase of Thurrock Flexible Generation Plant

2.3.1 The traffic flows generated during the decommissioning of the proposed development will be lower than those generated during its construction phase, thus a specific assessment of decommissioning has been scoped out.

2.4 Conclusions

2.4.1 The average construction phase of the Thurrock Flexible Generation Plant will generate up to 80 two-way HGV movements on average per day, which is equivalent to four HGV on average in each direction every 60 minutes, over a ten-hour day, with operational traffic flows negligible in comparison. Decommissioning will generate fewer HGV movements than construction. Both construction and decommissioning are short term effects, whereas the effects of all other developments considered in the cumulative assessment are long term and permanent.

2.4.2 Environmental impact assessments have been undertaken and conclude that the traffic and transport effects of the Thurrock Flexible Generation Plant would be negligible during the construction phase, short term and reversible.

2.4.3 In terms of total vehicle flows, the effects of the other developments are substantially greater than the effects of the Thurrock Flexible Generation Plant during its construction but none of the links exceed their respective threshold (Rule 1 or Rule 2, as set out in Section 2.6 of Volume 3, Chapter 10: Traffic and Transport).

2.4.4 The daily percentage increases in total traffic flows along the cumulative development flow links are negligible, no more than 4.03% for total vehicles and no more than 9.95% for HVs with the addition of the cumulative development flows to Thurrock Flexible Generation Plant flows for the peak construction phase. Such increases do not exceed the Rule 1 threshold set out above and the impact is therefore negligible.

2.4.5 In accordance with the IEA (1993) Guidelines the sensitivity of receptors along all links are considered to be low / negligible and the magnitude of impact is deemed to be negligible. The effect is therefore considered to be negligible, which is not significant in EIA terms. Therefore, the effect of the Thurrock Flexible Generation Plant on the links assessed is negligible and the addition of the cumulative development flows considered in this chapter are much greater than the effects of Thurrock Flexible Generation Plant but also leads to a negligible effect, according to the criteria adopted for the assessment. The much more significant and wide-ranging effects of the Lower Thames Crossing would not occur in the assessment year of 2022. Should Thurrock Flexible Generation Plant construction period overlap with that of the Lower Thames Crossing, the latter's impacts would outweigh the impact of Thurrock Flexible Generation Plant to such a degree that no significant cumulative effect arising from the contribution of Thurrock Flexible Generation Plant is predicted.

3. References

Institute of Environmental Assessment (IEA) (1993) Guidelines for the Assessment of Road Traffic. Lincoln, IEMA.