
THURROCK FLEXIBLE GENERATION PLANT
TECHNICAL NOTE 5
TRAFFIC IMPACT OF NON-MATERIAL CHANGE
Development Consent Order: S.I. 2022/157

1 INTRODUCTION

- 1.1 Miles White Transport (MWT) have been appointed by Thurrock Flexible Generation Ltd to provide transport planning advice in relation to a proposed non-material change (NMC) to the existing Development Consent Order (DCO) for the Thurrock Flexible Generation Plant.
- 1.2 The proposed amendment seeks to increase the number of gas engines from 48 to up to 100, noting the actual number will now be 96. There will be no increase in the overall output (620MW), but this will be generated through the provision of a higher number of smaller engines than originally consented.
- 1.3 The Department for Energy Security & Net Zero (DESNZ) provided a consultation response to the proposed NMC dated 1st August 2024. This included a paragraph on traffic movements which stated:
- “9. The Secretary of State acknowledges that transporting a larger number of smaller engines could lead to differing impacts on traffic and related emissions. The Applicant is requested to provide details of the impact of this non-material change on traffic movements, including abnormal indivisible loads that may need to be routed through Tilbury 2 which adjoins the site.”*
- 1.4 This Technical Note seeks to provide the additional information requested, save for “*related emissions*” which is covered by a separate Technical Note on air quality prepared by RPS.

2 BASELINE CONSENTED POSITION

- 2.1 The initial DCO application was supported by an Environmental Statement. Appendix 10.1 of that Environmental Statement comprised a comprehensive Transport Assessment (TA) produced by RPS and dated February 2020.
- 2.2 Section 3.4 of the TA identified the likely number of daily vehicle movements generated by the construction workers and the likely number of daily Heavy Goods Vehicle (HGV) deliveries. An average of 40 HGV deliveries (80 movements) were predicted per day while up to 80 HGV deliveries (160 movements) were predicted during the peak periods of construction. These values were based on the applicant’s experience of other similar schemes and included all associated construction activities including all deliveries (including Abnormal Indivisible Loads (AIL)) and all removal of material, waste etc.

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- 2.3 The above number of HGV deliveries / movements includes the HGVs associated with delivery of the 48 gas engines currently consented (as AILs). The values therefore represent the consented baseline HGV trip generation against which the traffic impact of delivering the higher number of smaller gas engines can be assessed.
- 2.4 Section 5 of the TA identified the future year traffic flows along the construction access route, i.e. the A13 east from Junction 30 of the M25 Motorway, the A1089 Dock Approach Road south to the A1089 St Andrews Road and A1089 Ferry Road. Future year traffic flows on the continuation of the construction access route via the Tilbury 2 link road, Fort Road, Coopers Shaw Road, Church Road and Station Road were also identified.
- 2.5 Table 5.5 of the TA summarised the 24-hour AADT flows on the various links along the construction access route in the 2022 design year with the values including appropriate growth factors plus the traffic flows associated with local committed development sites.
- 2.6 Section 6 of the TA considered trip generation and trip distribution. For HGV deliveries the average 80 HGVs per day and peak 160 HGVs per day were taken and for a robust approach were assigned to all the road links assessed. This was to cover the potential for construction vehicle use of any of the available site access points including Tilbury 2 and Station Road beyond.
- 2.7 It should be noted that full details of construction access have formed part of subsequent Construction Traffic Management Plans which have (on a phase by phase basis) been submitted to, consulted on with consultees, and approved by Thurrock Council. In these, the use of Tilbury 2 has to date been avoided. The use of the larger number of smaller engines proposed by this NMC would allow continued avoidance of Tilbury 2 during their delivery.
- 2.8 Table 6.2 and Table 6.3 of the TA identified the temporal distribution of the trip generation across a typical day for the average and peak number of construction HGVs respectively. In summary, these Tables identified 4 HGVs per hour (8 movements) over an average construction day and 8 HGVs per hour (16 movements) over a peak construction day.
- 2.9 Construction related trip generation from Section 6 of the TA was added to the baseline traffic flows identified in Section 5 to create Table 7.1 of the TA. This Table summarised the percentage increase in traffic flows on the various links along the construction access route and for ease of reference forms **Appendix A** of this Note.
- 2.10 It is this Table 7.1 that identifies the increase in traffic flows along the construction access route that were approved as part of the initial DCO application with these including the HGV movements associated with delivery of the 48 gas engines originally proposed. Table 7.1 therefore represents the baseline position against which the overall traffic impacts of delivering the additional 48 gas engines (taking the total number up to 96) can be assessed.
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3 HGV TRIP GENERATION FOR ADDITIONAL 48 GAS ENGINES

- 3.1 The smaller gas engines will each be delivered using a single HGV meaning a total of 48 additional HGVs (96 movements) compared to the consented scheme.
- 3.2 The smaller engines will not constitute AILs and will be delivered using conventional low loaders or similar.
- 3.3 It is envisaged that the 48 additional HGV deliveries will take place in 3 blocks of 16 engines with each block taking approximately 2 weeks to deliver. In total therefore the 48 additional HGV deliveries will be spread evenly over a 6 week period which equates to no more than 2 additional HGV deliveries (4 movements) per day.

4 TRAFFIC IMPACT OF ADDITIONAL HGV DELIVERIES

- 4.1 As previously discussed, Table 7.1 of the TA (reproduced as Appendix A of this Note) identifies the percentage increases in HGV numbers along the construction access route that were approved through the original DCO. The impact of the additional HGV deliveries associated with the increased number of gas engines can therefore be considered by adding the 2 additional HGVs (4 movements) to the Table 7.1 values. This exercise is summarised in **Table 1** overleaf. It should be noted that only the HGV values have been included as the vehicle movements associated with the construction workers (cars and vans) will not change as a consequence of the additional engines.
- 4.2 It can be seen from Table 1 that the impact of the additional HGVs associated with the increased number of gas engines is minimal. If the additional deliveries are made during average construction traffic periods, the increase in the percentage impact values compared to the consented values varies between +0.02 on Link 1 and +1.48% on Link 11. The corresponding values for the peak construction traffic periods are +0.02% and +1.41%.
- 4.3 On the sections of the A13 and A1089 that form parts of the Strategic Road Network the percentage increases are a maximum of +0.04%. This level of change is clearly negligible and does not warrant further investigation.
- 4.4 The largest impact is felt on Coopers Shaw Road, Church Road and Station Road however this is primarily a function of the lower number of HGVs using these roads in the baseline scenario. Despite the up to +1.48% impact identified, the addition of 2 HGVs per day (4 movements) on these roads would clearly not lead to a significant increase in congestion or similar over and above that approved through the initial DCO. The very slight increase in HGV movements would not be noticeable to other drivers using the route.

Link	Description	2022 Baseline HGVs	Average Construction Flows				Peak Construction Flows			
			24Hr AADT consented	%age Impact consented	24Hr AADT proposed	%age Impact proposed	24Hr AADT consented	%age Impact consented	24Hr AADT proposed	%age Impact proposed
1	A13, M25 J30 to A126	17487	83	0.48%	87	0.50%	164	0.94%	168	0.96%
2	A13, A126 to A1012	16744	83	0.50%	87	0.52%	164	0.98%	168	1.00%
3	A13, A1089 to A1012	16382	83	0.51%	87	0.53%	164	1.00%	168	1.03%
4	A1089, Marshfoot Rbt to A13	11960	83	0.69%	87	0.73%	164	1.37%	168	1.40%
11	Coopers Shaw Rd / Church Rd / Station Rd	269	83	30.86%	87	32.34%	164	61.04%	168	62.45%
15	A13, Orsett Cock to A1089	10220	83	0.81%	87	0.85%	164	1.61%	168	1.64%
16	A1089 Dock Approach Rd, Marshfoot Rbt to ASDA	12112	83	0.69%	87	0.72%	164	1.36%	168	1.39%
17	A1089 St Andrews Rd, ASDA Rbt to Gate 1	9640	83	0.86%	87	0.90%	164	1.70%	168	1.74%
18	A1089 St Andrews Rd, Gate 1 to Tilbury 2	3976	83	2.09%	87	2.19%	164	4.13%	168	4.23%
19	Tilbury 2, A1089 St Andrews Rd to Fort Rd	2673	83	3.11%	87	3.25%	164	6.15%	168	6.29%
20	Fort Rd, Tilbury 2 to Brennan Rd	307	83	27.02%	87	28.34%	164	53.45%	168	54.72%
21	Fort Rd, Brennan Rd to Coopers Shaw Rd	334	83	24.89%	87	26.05%	164	49.23%	168	50.30%

TABLE 1: 2022 Baseline HGVs plus Consented and Proposed HGVs

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- 4.5 Section 7 of the TA also included a weekday highway peak hour capacity assessment of the ASDA roundabout under with and without construction traffic flow conditions. It is not considered necessary to revisit this as the increase in flow (2 HGVs (4 movements) per day) associated with the change in gas engines will clearly be insignificant. In practice, it is also likely that delivery of the gas engines will take place outside of the highway peak hours assessed.
- 4.6 In all of the above it should be noted that the reduced size of the gas engines allows the size of the foundations required to support them to be reduced. This in turn is likely to result in a slight reduction in the overall number of HGV deliveries directly associated with this element of the civils contracts compared to those considered and consented through the initial DCO application. It is not possible to accurately identify the reduction in HGV movements that may occur, so no allowance has been made for this within Table 1. The Table 1 values therefore represent a robust assessment of the likely traffic impact associated with the proposed change in the number and size of the gas engines.

5 SUMMARY AND CONCLUSIONS

- 5.1 This Technical Note has been prepared to address a request from DESNZ for details of the likely traffic impact associated with a proposed NMC to the Thurrock Flexible Generation Plant DCO.
- 5.2 A detailed TA formed part of the initial DCO application with this identifying the total number of HGV deliveries to be 40 per day (80 movements) on average and up to 80 per day (160 movements) during peak construction periods.
- 5.3 The proposed NMC will generate an additional 48 HGV deliveries (96 movements) with these envisaged to take place evenly over a period of 6 weeks. This equates to an additional 2 HGV deliveries (4 movements) per day over a short period within the overall construction programme. The addition of 2 HGVs per day to the 40 (average) and 80 (peak) values identified in the TA is considered negligible. All additional HGVs will be conventional with no additional AIL movements required.
- 5.4 The initial TA identified the percentage increase in HGVs on the construction access route compared to the 2022 baseline (without development) traffic conditions. These percentage increase values were deemed acceptable given approval of the DCO application.
- 5.5 The same calculations have been revisited to also include the additional 2 HGVs (4 movements) per day associated with the proposed NMC. The impact of these additional HGVs varies between +0.02% and +1.48% on various parts of the construction access route and by a maximum of +0.04% on any part of the Strategic Road Network. These increases are considered negligible and will have no material impact on the operation or safety of the roads that lead to and from the site.

5.6 It is concluded that the small number of additional HGV movements associated with the proposed NMC would not result in a severe residual cumulative impact on the road network or an unacceptable impact on highway safety. As such, there are no transport or highway related reasons why the proposed NMC should not be granted.

5.7 It also worth noting that:

- the above is considered very conservative given that the use of a larger number of smaller engines will likely result in a reduction in HGVs needed for other purposes; and
- the Construction Traffic Management Plans discharged to date by Thurrock Council have avoided the use of Tilbury 2 with delivery of any additional engines resulting from this NMC (none of which would be AILs) also avoiding the use of Tilbury 2.

APPENDIX A

Table 7.1 from RPS Transport Assessment

Table 7.1: 2022 Baseline plus Average Construction Traffic Flows and 2022 Baseline plus Peak Construction Traffic Flows.

Road Link ID	Road Link / Description	Data	2022 Baseline	Average Construction		Peak Construction	
				24 hr AADT*	% Impact	24 hr AADT*	% Impact
1	A13 between M25 junction 30 and A126	Total	132726	170	0.13%	286	0.22%
		HV	17487	83	0.48%	164	0.94%
2	A13 between A126 and A1012	Total	110772	170	0.15%	286	0.26%
		HV	16744	83	0.50%	164	0.98%
3	A13 between A1089 and A1012	Total	114614	170	0.15%	286	0.25%
		HV	16382	83	0.51%	164	1.00%
4	A1089 between Marshfoot Road roundabout and A13	Total	37249	170	0.46%	286	0.77%
		HV	11960	83	0.69%	164	1.37%
11	Coopers Shaw Road / Church Road / Station Road, between Gun Hill Road and EMR East Tilbury junction	Total	1138	170	14.95%	286	25.15%
		HV	269	83	30.86%	164	61.04%
15	A13, between Orsett Cock roundabout and A1089	Total	102630	170	0.17%	286	0.28%
		HV	10220	83	0.81%	164	1.61%
16	A1089 Dock Approach Road, between Marshfoot Road roundabout and ASDA roundabout	Total	42502	170	0.40%	286	0.67%
		HV	12112	83	0.69%	164	1.36%
17	A1089 St Andrews Road, between ASDA roundabout and Port of Tilbury Gate 1	Total	18521	170	0.92%	286	1.54%
		HV	9640	83	0.86%	164	1.70%
18	A1089 St Andrews Road, between Port of Tilbury Gate 1 and Proposed Tilbury 2 Road	Total	8953	170	1.90%	286	3.20%
		HV	3976	83	2.09%	164	4.13%
19	Proposed Tilbury 2 Road between A1089 St Andrews Road and Fort Road	Total	4640	170	3.67%	286	6.17%
		HV	2673	83	3.11%	164	6.15%
20	Fort Road, between Proposed Tilbury 2 Road and Brennan Road	Total	1786	170	9.52%	286	16.02%
		HV	307	83	27.02%	164	53.45%
21	Fort Road, between Brennan Road and Coopers Shaw Road	Total	2204	170	7.72%	286	12.98%
		HV	334	83	24.89%	164	49.23%
22	Station Road, East Tilbury	Total	500	N/A	N/A	20	4.0%
		HV**	0	N/A	N/A	10	N/A

*Note that all temporary construction traffic has been assigned to every link, for testing purposes, with the exception of Station Road (Link 22)

**Although no HVs were observed along Station Road during the survey, HVs are not prohibited from Station Road