The Planning Act 2008

Sizewell C (SZC)

Planning Inspectorate Reference: EN010012

Deadline 7 – *3 September 2021*

Written Summary of Oral Case

ISH 8 Air Quality, Noise, and Vibration 25 August 2021

20026200 East Suffolk Council

Agenda Item	East Suffolk Council Submissions
1. Introductions	Speakers on behalf of East Suffolk Council: Andrew Tait, QC Isabella Tafur Mark Kemp, ESC Environmental Protection Officer Joe Bear, Associate (Adrian James Acoustics Ltd) Gary Percival, Associate (Adrian James Acoustics Ltd) Dr Mark Broomfield, Associate Director (Ricardo, Energy and Environment)
2. The assessment of the noise and vibration impacts of the Proposed Development: (a) (i) Whether the potential noise and vibration impacts of the Proposed Development can be satisfactorily assessed from the information submitted by the Applicant? (ii) If not,	**(a) (i) Whether the potential noise and vibration impacts of the Proposed Development can be satisfactorily assessed from the information submitted by the Applicant?** ESC considers that there are some outstanding areas where the potential noise and vibration impacts of the Proposed Development cannot currently be satisfactorily assessed. These are detailed in the initial Statement of Common Ground [REP2-076]. ESC and SCC have submitted to the Applicant a number of questions and requests for additional information and clarifications in the form of numbered RFIs. These documents have also been submitted to the Examination [REP3-031 and REP6-032]. The Applicant has supplied formal responses to the early requests [REP3-031] and also recently supplied draft responses to the later requests which we understand will be submitted to the Ex-A at D7. Dialogue is ongoing relating to [REP6-032]. ESC is in the process of reviewing this information and will respond formally once these are submitted. **(ii) If not, what additional information would be required?** ESC is in discussion with the Applicant on a variety of aspects. ESC seeks confirmation of deliverability of the RNMS. The ultimate outcomes of the Rail Noise Assessment are based on those measures being delivered in full, and so

what additional information would be required? (b)Whether the SOAEL, LOAEL levels for construction, traffic, rail noise and vibration are set at appropriate levels. (c) Whether higher standards of protection are appropriate in light of the potential length of the construction period (d)Operational noise at the MDS and traffic noise from the new roads	delivery of these measures is essential. ESC considers the RNMS needs to be expanded to include track upgrades to the East Suffolk Line and to include noise barriers where appropriate. The number of receptors and groups of receptors within the defined adverse and significant adverse impact distances for ground borne noise along the Leiston Branch Line and East Suffolk Line, this has been queried with the Applicant as RFI 50 [REP6-032]. ESC has questioned the presence of resilient rail pads along East Suffolk Line, as the Applicant's assessment assumes that the track mounting conditions found at Woodbridge apply along the length of the ESL but highlights that this is not currently known. ESC would like to understand if there are areas where noise barriers are a worthwhile and feasible form of mitigation against rail noise. We note Appendix I's assessment of acoustic fencing which identified visual amenity as a significant issue to those barriers. ESC have submitted a response at Deadline 7 which indicates that ESC considers there still to be scope for further assessment, taking into account the balance of the acoustic benefits, rather than discounting them outright on the basis of impact on visual amenity. As noted above, the Applicant has supplied draft responses to RFI's but these have not been fully reviewed so this is not an exhaustive list however the following issues are considered significant and known to be outstanding: **Rail noise** 1) Whether the mitigation measures set out in the Rail Noise Mitigation Strategy (RNMS) have all been confirmed deliverable by Network Rail, as this is not clear from the most recent Statement of Common Ground between The Applicant and Network Rail [REP5-095]. As secondary mitigation [APP-545, AS-188] the ultimate outcomes of the rail noise assessment are reliant on all measures in the RNMS being deliverable in full. 2) The number of receptors, or groups of receptors, within the defined adverse and significant adverse impact distances for ground-borne noise along the Leiston Branch Line and East Suffolk Line [RFI 50, REP6-032]. 3) Whether resilient rail pads are present along the full length of the East Suffolk Line and if not what effect that would have on the assessment outcomes? [RFI 49, REP6-032].

	4) Whether there are areas where noise barriers would be a worthwhile and feasible form of mitigation against airborne rail noise [RFI 14, REP3-010] in order to meet EN-1 and NPSE policy aims to minimise and mitigate noise above LOAEL. Road noise 1) The number of receptors along existing roads where increases in road traffic noise will trigger the Noise Mitigation Scheme (based on the originally and revised thresholds). 2) Whether quiet road surfaces and associated maintenance funds (for new and existing roads) and noise bunds (new roads) are being considered to meet the EN-1 and NPSE policy aims to minimise and mitigate noise above LOAEL. [RFI 41, REP6-032]. Construction noise The outstanding issues with the construction noise assessment relate to the thresholds in the CoCP, NMMP and NMS and other mitigation measures which is discussed under agenda item 5. Operational noise An adequate technical justification for why the same absolute night-time noise criterion, which includes appropriate consideration of tonality, has not been adopted for the operational power station as is adopted for all other operational plant noise on the Main Development Site (35 dB $L_{Ar,15mins}$).
	(b)Whether the SOAEL, LOAEL levels for construction, traffic, rail noise and vibration are set at appropriate levels. As stated in ESC's comments on the Applicant's Initial Statement of Common Ground [REP5-138], the Applicant's assessment approach has substantially changed since pre-application consultation and significantly different LOAELs and SOAELS have been adopted in the ES. This approach also differentiates SOAELs from the levels identified as significant in EIA terms. However, ESC's focus is on practical measures to minimise and mitigate noise impacts as far as possible and are therefore generally prepared to accept the LOAEL and SOAEL values in the ES for construction,

	traffic, rail noise and vibration provided the various issues relating to practical controls, to be discussed under agenda item 5, are addressed. For airborne rail noise, the NMS will be offered at the EIA significance level rather than SOAEL. ESC is yet to formally accept that, pending consideration of the RNMS being broadened in terms of its scope and confirmation of its deliverability. The threshold for rail noise in the NMS may need to be further reduced as a form of secondary mitigation if the measures in the RNMS cannot be delivered. ESC considers track upgrades on the ESL to be necessary as part of the Applicant's responsibility to mitigate and minimise adverse effects above LOAEL. SOAELs are thresholds to be avoided, and for airborne rail noise we consider that the NMS should not simply be used as a means of avoiding SOAEL. *Have we agreed the level at which SOAEL would apply?* LOAELs and SOAELs are agreed, though we do retain some doubts around the SOAEL value adopted for airborne rail noise. ESC decided some time ago not to challenge the adopted rail noise SOAEL further on the assumed basis that SOAEL would be avoided and that that the best practicable controls would be in place to mitigate and minimise rail noise as far as possible. Our focus is securing realistic, practical controls. The same principle applies to the construction noise LOAEL and SOAEL thresholds which are agreed with the Applicant on the basis that the focus will be on ESC requests for additional real-world controls in terms of lower construction noise thresholds enforced through Section 61 applications (or equivalent bespoke processes).
	(c) Whether higher standards of protection are appropriate in light of the potential length of the construction period Given the prolonged duration of the construction works, ESC's position is that the construction noise thresholds adopted within the CoCP should be aligned with Criteria suggested in Annex E of BS 5228-1:2009+A1:2014 for construction activities involve large scale and long-term earth moving activities. For the benefit of the examining authority, the text of Annex E5 of the standard states the following:

	"Where construction activities involve large scale and long term earth moving activities, then this is more akin to surface mineral extraction than to conventional construction activity. In this situation, the guidance contained within the Technical Guidance to the National Planning Policy Framework [15] needs to be taken into account when setting criteria for acceptability. The Technical Guidance states: *"Subject to a maximum of 55 dB(A) LAeq, 1h (free field), mineral planning authorities should aim to establish a noise limit at the noise-sensitive property that does not exceed the background level by more than 10 dB(A). It is recognised, however, that in many circumstances it will be difficult to not exceed the background level by more than 10 dB(A) without imposing unreasonable burdens on the mineral operator. In such cases, the limit set should be as near to that level as practicable during normal working hours (0700–1900) and should not exceed 55 dB(A) LAeq, 1h (free field). Evening (1900–2200) limits should not exceed background level by more than 10 dB(A) and night-time limits should not exceed 42 dB(A), LAeq, 1h (free field) at noise-sensitive dwellings."* *"Based upon the above, it is suggested that the limit of 55 dB LAeq, 1 h is adopted for daytime construction noise for these types of activities but only where the works are likely to occur for a period in excess of six months. Precedent for this type of approach has been set within a number of landmark appeal decisions associated with the construction of ports. Other recommendations with regard to noise emissions given in paragraphs 28 to 31 of the Technical Guidance to the National Policy Planning Framework [15] should also be taken into account, where appropriate."* During recent discussions, the Applicant has offered to lower the threshold in the Noise Monitoring and Management Plan (for a Bespoke Management Plan to be required) to daytime level of 55 dB LAeq. The reduction in threshold is welcomed by ESC as a step in the right direction but not accepted as this would apply to "day" shifts up until 23:00 and would therefore ignore the higher sensitivity to noise during evening periods. ESC has also requested that the Applicant consider adopting lower thresholds for construction noise in the Noise Mitigation Scheme. This is discussed further under Agenda Item 5c.

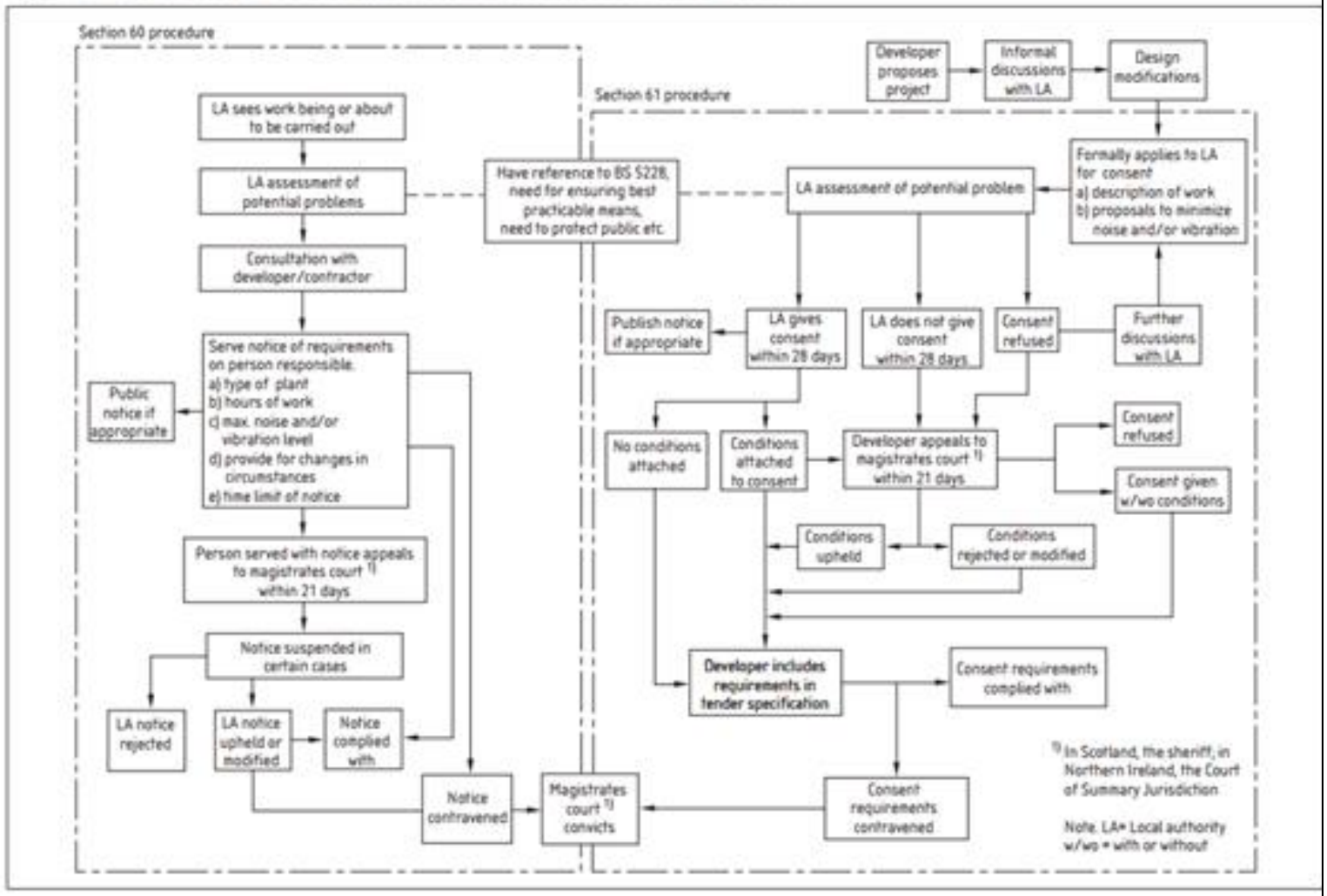
	(d) Operational noise at the MDS and traffic noise from the new roads Operational noise ESC considers that a fixed noise limit of 35 dB $L_{Ar,15mins}$ should be adopted for operational plant noise from the power station (and Associated Development sites), which would appropriately consider tonality, and which would also be consistent with the limits adopted elsewhere on the Main Development Site. If this cannot be achieved for practical and/or engineering reasons then adequate technical justification should be provided [RFI55, REP6-032] Discussions are ongoing with the Applicant on this point and there remains some disagreement. Earlier in this hearing, Mr Brownstone stated that the Applicant does not consider a noise limit necessary, and the aim should simply be to provide the lowest possible operational noise levels. ESC agrees with the second part of this statement and the aim should always be to ensure the lowest possible operational noise levels to minimise the potential impact. However, we do not agree with the Applicant that a noise limit is unnecessary. As things stand, there would be no operational noise control for the main development site. The applicant argues that this is reasonable on the basis that their proposals represent *"the quietest possible design"*. In our view this statement needs to be scrutinised and clearly demonstrated. Residents in the immediate vicinity of the power station are unlikely to agree that a noise limit is *"not necessary"*. We consider an operational noise limit of 35 dB $L_{Ar,15mins}$ both reasonable and appropriate. This level was adopted in the ES as a design limit for all other mechanical plant at the MDS, including the electrical substation, combined heat and power/CHP, and backup generator, but not the power station. We consider that the 35 dB $L_{Ar,15mins}$ design limit should include all operational plant noise, including the power station, and should be formally controlled. Such a limit could be secured by Requirement or otherwise, though a Requirement would probably be most straightforward. In the ES, the Applicant adopts an absolute night-time noise limit of 40 dB L_{night} for operational power station noise, where it is appropriate to consider absolute noise levels as part of the BS 4142 assessment. ESC does not consider L_{night} to be an appropriate parameter for assessing the impact of mechanical plant noise. This parameter is taken from the World Health Organisation *'Night Noise Guidelines for Europe'* (2009) which are primarily based on research

	into the effects of transportation noise on sleep and are therefore not ideally suited to assessment the impact of plant noise. In particular, the L_{night} parameter does not consider the influence of potentially distinctive acoustic characteristics. The BS 4142:2014+A1:2019 methodology (adopted by the Applicant in their MDS operational noise assessment [APP-202]) requires consideration of such characteristics where contextually appropriate. This is accepted in the Applicant's assessment, particularly with regard to tonality, and the Applicant therefore adopted an appropriate 4 dB feature correction for tonality in their assessment in accordance with BS 4142. This emphasises why a rating level limit for operational noise from the MDS is appropriate because only a rating level would appropriately consider the potential influence of tonality. Tonality is typically inherent in noise from power stations and the Applicant acknowledges in their assessment that such tonality is *"anticipated"* [APP-202]. In their response to RFI 10 [REP3-031] the Applicant refers to the operational power station noise limit for Hinkley Point C, which was set at 45 dB $L_{Aeq,1hour}$. In this response, the Applicant suggests that this level is broadly equivalent to the 40 dB L_{night} level adopted in their assessment. ESC does not agree that these levels are broadly equivalent, but moreover we would challenge any assumed equivalence between the Hinkley Point C development site and this site. Sizewell is located in an AONB, and ESC believe that each proposal should be considered in terms of the local context. An average noise level of 45 dB LAeq,1hour would be more than 5 dB higher than the prevailing ambient noise levels at some receptors around the MDS (according to the Applicant's baseline monitoring) and power station noise at this level would therefore both increase and dominate the ambient noise level. This is not considered acceptable. In his earlier comments, Mr Brownstone also suggested that a *"rating level noise limit would not be enforceable or reasonable"*. This is simply not correct. Rating level noise limits are commonly imposed on new mechanical plant installations of varying scale and importance. BS 4142 is the appropriate methodology for assessing this type of noise and a rating level limit ensures acoustic characteristics are appropriately considered. Such limits can be successfully and reasonably enforced, and BS 4142 is not intended to just be used for assessing noise at the planning/design stage.

	ESC note that there remains a significant difference between the absolute noise limit that we and the Applicant consider would be appropriate. The 45 dB $L_{Aeq,1hour}$ HPC noise limit is not a rating level, and if a 4 dB tonality correction was assumed to apply to a 35 dB $L_{Ar,15mins}$ rating level (per the Applicant's assessment), this would effectively become a limit of 31 dB $L_{Aeq,15mins}$. This suggests there is a difference of 16 dB between the level which ESC should be applied (which is consistent with the other limits in the MDS operational noise assessment) and the 45 dB $L_{Aeq,1hour}$ limit. ESC acknowledges that this is a significant difference, and that a compromise may need to be reached. We also accept that there may be practical or engineering reasons why a 35 dB $L_{Ar,15mins}$ noise limit could not be achieved. Indeed, the Applicant has suggested [REP3-031] that *"health and safety considerations"* may limit potential for noise reduction and that there might be a level at which no further noise reduction is possible. However, this has not yet been adequately justified in engineering terms if so, ESC considers that a detailed engineering explanation should be provided. ESC does not consider it sufficient to simply state that this represents *"the quietest possible design"* without further justification. In his oral evidence, Mr Brownstone gave examples of situations at HPC where the noise from individual mechanical systems could and could not be practicably reduced. This indicates that further noise reduction would be possible if the dominant contributory noise sources were identified, and possible noise control engineering considered for these on an individual basis. ESC so no reason why this could and should not be carried out to minimise the noise output.
3. **The implications of the traffic noise from the Proposed Development during construction and operation** (a) The early years	**(a) The early years** ESC supports Suffolk County Council's position on noise from traffic associated with the construction and operation of the development.
	(b) Traffic Noise upon completion of SLR, and at the P&R sites

(b) Traffic Noise upon completion of SLR, and at the P&R sites (c) Effect of shift patterns and freight management strategy	**(c) Effect of shift patterns and freight management strategy**
4. Night-Time Rail Noise (a) Whether the operation of the rail freight as proposed is an appropriate mechanism for delivery of the proposed development	**(a) Whether the operation of the rail freight as proposed is an appropriate mechanism for delivery of the proposed development** ESC supports the aspiration to avoid HGV movements from the highway network where possible and therefore support the rail freight strategy in principle but consider a fully developed rail noise mitigation strategy, which also meets planning policy aims, to be essential to the acceptable and reasonable use of night rail freight. The principal aspiration to remove HGV movements from the highway network where possible is supported and therefore, the rail freight strategy as a matter of principle is supported by ESC. The specific mechanisms proposed for bringing forward the rail elements is not in dispute. ESC is not satisfied with the RNMS at present. Furthermore, Requirement 25 provides for submission of *"a rail noise mitigation scheme"*, which is a generic requirement. It is not, at present, specifically tied to the document known and referred to as the Rail Noise Mitigation Strategy. We consider there needs to be some language added or amended to ensure that the Requirement is tied to that specific document. ESC's position that the RNMS represents Applicant's responsibility to mitigate noise impact at LOAEL, and to exhaust all forms of mitigation prior to providing NMS (insulation). The RNMS must be comprehensive, complete, and committed to. Delivery of RNMS is key to accepting the NMS in terms of rail freight at EIA significance threshold as currently offered. Should the RNMS prove undeliverable or inadequate, we reserve the right to request the NMS to be used at LOAEL to bolster mitigation and the policy aim to mitigate and minimise rail noise above LOAEL.

5. Mitigation and controls including; (a) The Code of Construction Practice (CoCP), (b) Noise Monitoring and Mitigation Plan (NMMP), (c) Noise Mitigation Scheme (NMS) and (d) Rail Noise Mitigation Strategy (RNMS): (e) Working Hours	**(a) The Code of Construction Practice (CoCP),** ESC has submitted detailed comments and questions [REP6-032] in relation to the Code of Construction Practice. Notwithstanding the detail of the various comments and questions raised, ESC consider that the construction noise thresholds should be lower, in line with Annex E5 of BS 5228-1:2009+A1:2014 and that these should be applied within the Code of Construction Practice as opposed to Applicant's proposal of applying tertiary criteria in the Noise Mitigation Monitoring and Migration plan, which is a sub-document of the CoCP. This would provide clear and unambiguous guidance to the contractors who will be using the CoCP to plan and implement the construction works.
	(b) Noise Monitoring and Mitigation Plan (NMMP) ESC has submitted details comments and questions [REP6-032] in relation to the Noise Monitoring and Mitigation Plan. The Noise Monitoring and Management Plan proposes a bespoke process to develop mitigation as an alternative to Section 61 applications. ESC prefers Section 61 applications and consider that any alternative bespoke process should be an enhancement on the Section 61 process to justify such a deviation from a standard process [REP6-032]. Figure A.1 of BS5228-1 sets out a clear flow diagram for the implementation of the Section 60 and 61 process. This is included below for the benefit of the Examining Authority.

Delivery and timing of primary, secondary and tertiary mitigation referred to throughout the ES. Suitability/enforceability of alternative to Section 60 and Section 61 of the Control of Pollution Act 1974 Procedure Whether any additional requirements, would be necessary to address adverse noise and vibration affects and whether the ExA should disapply the defence of statutory authority in whole or in part?	Figure A.1 **Procedures to control construction noise under the Control of Pollution Act 1974** 

	ESC's position is that a bespoke mitigation process should provide real practical advantages over the standard Section 61 application process without forgoing the legally enforceable powers under CoPA 1974, including the ability impose conditions on approvals. ESC welcome's the Applicant's proposals for a collaborative approach to ongoing control of construction noise on the various construction sites and do not envisage the need to impose conditions on Section 61 approvals as a matter of course but consider it essential that this provision is retained to be used if necessary.
	(c) Noise Mitigation Scheme (NMS) and ESC acknowledges that the construction noise thresholds in the Noise Mitigation Scheme are taken from Annex A4 of BS 5228-1:2009+A1:2014 which is a traceable and appropriate source. However, given the unusually long duration of the construction works in this case ESC has asked the Applicant if it would be feasible to adopt more stringent bespoke noise insulation trigger levels to provide increased protection to the properties most affected by construction noise from the Main Development Site The revised thresholds in the Noise Mitigation Scheme for rail noise are welcomed but cannot be formally accepted by ESC until it is satisfactorily demonstrated that all other forms of mitigation have been exhausted and where deliverable included in the Rail Noise Mitigation Strategy [REP5-138].
	(d) Rail Noise Mitigation Strategy (RNMS): ESC has submitted details comments and questions [REP6-032] in relation to the Rail Noise Mitigation Strategy. The track upgrades proposed in the Rail Noise Mitigation Strategy for the Leiston Branch Line should be extended to the East Suffolk Line [REP6 -032]. ESC welcomes the work so far undertaken in securing these improvements as we regard them as essential in terms of the Applicant's responsibility to mitigate and minimise noise impact between LOAEL and SOAEL. It is not clear from the most recent Statement of Common Ground between the Applicant and Network Rail [REP5-095] whether the mitigation measures set out in the Rail Noise Mitigation Strategy are deliverable. As primary

	mitigation the outcomes of the rail noise assessment are reliant on all measures in the RNMS being deliverable in full. It remains unclear whether noise barriers would be a worthwhile and feasible form of mitigation against airborne rail noise [RFI 14, REP3-010] in order to meet EN-1 and NPSE policy aims to minimise and mitigate noise above LOAEL. If so, these should be included in the RNMS. It is noted that contrary to the first Network Rail Statement of Common Ground that Network Rail now do not support barriers on their land, ESC welcomes the Applicant looking into other land options and look forward to further discussion with them. ESC would like to see the Green Rail Route and Leiston Branch Line included in acoustic fencing considerations. We consider that barriers should be part of the mitigation package for minimisation of impact. ESC would like to see barriers included in the RNMS, where this is worthwhile and practicable. If barriers are not possible, this should be fully justified and also makes other forms of mitigation (including an appropriate threshold in the NMS) even more important.
	(e) Working Hours In addition to the points raised under agenda items 2c and 5a, ESC queries whether Saturday afternoon working is strictly necessary at Associated Development sites in order to ensure timely delivery, considering that the potential for adverse and significant adverse construction noise impacts is greatest during that period. [RFI 25, REP6-032].
	Delivery and timing of primary, secondary and tertiary mitigation referred to throughout the ES. It is not clear from the most recent Statement of Common Ground between the Applicant and Network Rail [REP5-095] whether the mitigation measures set out in the Rail Noise Mitigation Strategy are deliverable. As primary mitigation the outcomes of the rail noise assessment are reliant on all measures in the RNMS being deliverable in full.

	Suitability/enforceability of alternative to Section 60 and Section 61 of the Control of Pollution Act 1974 Procedure The Noise Monitoring and Management Plan proposes a bespoke process to develop mitigation as an alternative to Section 61 applications. ESC prefers Section 61 applications and consider that any alternative bespoke process should be an enhancement on the Section 61 process to justify such a deviation from a standard process [REP6-032].
	Whether any additional requirements, would be necessary to address adverse noise and vibration affects and whether the ExA should disapply the defence of statutory authority in whole or in part? Requirement 25 should be adjusted so that the scheme that is submitted has a relationship with the commitments in Requirement 10. An Operational Noise Requirement should be introduced. with appropriate consideration given to tonality. If there is no such limitation, then there would be no control on the ultimate operational noise output.
6. Air Quality (a) Methodology of assessment and whether methods used are appropriate to ensure that the Proposed Development will meet the highest environmental standards both during construction and operation.	**(a) Methodology of assessment and whether methods used are appropriate to ensure that the Proposed Development will meet the highest environmental standards both during construction and operation** Summary**:** ESC now agrees that assessment methods are appropriate to meet the highest standards. ESC's and SCC's LIR highlights that the Applicant have demonstrated the scheme in isolation and in-combination with other schemes will not cause a significant impact upon nitrogen dioxide (NO_2), and fine particulate matter (PM_{10} and $PM_{2.5}$) across the district. An exception to this was in Stratford St Andrew AQMA, as the Applicant had not formally submitted a commitment to adequate emission standards at the time of LIR submission. Controls on emission standards (Euro standards) of HDVs are required to ensure there is no breach of air quality objectives in the Stratford St Andrew AQMA (Para 19.1 through to 17.4 LIR [REP1-045]). These have now been agreed between ESC and the Applicant (AQ7 SoCG [REP2-069], Pages 28, 31 and 32 of CoCP [REP5-078]). The LIR also highlighted that controls should be placed on emission standards for Non-Road Mobile Machinery (NRMM). The currently submitted SoCG (AQ7) indicates that discussions are ongoing regarding mitigation of Euro VI vehicles and NRMM. However, the CoCP has subsequently been updated to include a minimum commitment for

(b) PM10 and PM2.5 and NOx Action levels, monitoring locations and reporting procedures	HDVs and NRMM, with an 8% cap on non-Euro VI and 15% cap on non-Stage IV. As a result, ESC and the Applicant are now in agreement that impacts from HDVs and NRMM will be insignificant. This position will be updated in the deadline 7 SoCG. The LIR also highlighted agreement between the councils and the Applicant that mitigation and monitoring of dust emissions can minimise impacts so that they are negligible. The Applicant is now proposing to introduce a new requirement for a dust monitoring and management plan (DMMP) to be agreed with ESC. ESC's position on this matter will be reviewed following receipt of proposed contents for the DMMP on 20/8/21 and we expect that agreement can be reached.
	(b) PM10 and PM2.5 and NOx Action levels, monitoring locations and reporting procedures ESC's LIR states that we are satisfied that the proposal will not give rise to a significant impact on particulate matter or nitrogen dioxide. Certain concerns were raised at the time of the LIR specifically relating to the Stratford St Andrew AQMA. Since then, further controls have been proposed and are set out in the CoCP – and emission levels for HDVs and Non Road Mobile Machinery have now been agreed and incorporated in the CoCP. There is also a provision in the document for a dust monitoring and management plan (DMMP) which will need to be approved by ESC and detail of this document is under discussion between the applicant and the Council. In respect of the equivalent provision for the noise monitoring and management plan, there is a requirement for this to be approved before relevant construction work commences. There is no equivalent for the DMMP, albeit the Applicant confirmed at the hearing that the wording of the CoCP would be amended to ensure that the DMPP would have to be approved by ESC prior to commencement of construction. The DMMP will be subject to approval by ESC and will include details of proposed monitoring locations and frequency. ESC welcomes the Applicant's commitment, expressed at the hearing, to fund ESC's ongoing air quality monitoring. This should be reflected in the Deed of Obligation. $\underline{PM_{2.5}}$

	In terms of monitoring of $PM_{2.5}$ - this is not currently monitored by ESC, and this has not been specifically requested of the Applicant – one of the reasons for this is that the 2018 IAQM guidance makes it clear that emissions of dust from construction sites is generally in the coarser fractions and monitoring of $PM_{2.5}$ should not normally be required. *Box 2, pg 9 Guidance on Monitoring in the Vicinity of Demolition and Construction Sites, October 2019* guidance_monitoring_dust_2018.pdf (iaqm.co.uk) *Box 2: Which PM Concentration Metric Should be Measured? Some monitoring techniques can only measure one metric (e.g. PM10 or PM2.5) while others can simultaneously measure several. It is recommended that priority be assigned to the measurement of PM10, as emissions of dust from construction sites are predominantly in the coarser fractions, but where TSP concentrations are also recorded, these may be useful in identifying source contributions. Monitoring of PM2.5 concentrations should not normally be required (but should be reported where available) unless measurements for comparison with the air quality objectives are required. Emissions of PM2.5 will be principally related to NRMM exhausts. It is recommended that PM2.5 should not be the primary metric.* ESC understands that there are a number of local residents that have concerns about a lack of $PM_{2.5}$ monitoring. If that is something that the Applicant were willing to countenance and fund, then ESC would welcome that. However, the Councils have not specifically asked for it. **Action levels in respect of NO_2, dust and PM_{10}** In the CoCP it is highlighted that monitoring locations will be agreed with the Council. It is expected that the DMMP will be include agreed monitoring locations and action levels. Currently no action level for NO_2 has been proposed by or agreed with the Applicant albeit ESC notes that the Applicant does propose some on-site monitoring and the inclusion of action levels in the next iteration of the CoCP. Controls on NO_2 off-site will be managed through the agreed minimum Euro emissions standards for HDVs accessing the site, and no additional trigger level other than compliance with the air quality standard is required. It

	may be appropriate for a trigger level to be specified for site monitoring of NOx levels: this can be agreed as part of the Dust Monitoring and Management Plan. The CoCP sets out action levels of 0.5g/m^2/day for dust nuisance and 190 µg/m^3 for hourly PM_{10} concentrations. Following clarification, ESC agrees with the proposed threshold of 190 µg/m^3 for 24 hour mean PM10 concentrations. ESC does not accept the proposed dust nuisance threshold, as the recommended threshold in the Outline Dust Management Plan [APP-213 Annex 12A.3 Table 1.1], and other references is 0.2 g/m^2/day, (e.g., IAQM[1] and the Environment Agency[2]). ESC understands that the Applicant intends to amend the action level for dust to 0.2 g/m^2/day in the next iteration of the CoCP at Deadline 7. [1] http://www.iaqm.co.uk/wp-content/uploads/guidance/monitoring_construction_sites_2012.pdf and https://iaqm.co.uk/text/guidance/guidance_monitoring_dust_2018.pdf [2]https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/301206/TGN_M17_-_Monitoring_of_particulate_matter_in_ambient_air_around_waste_facilities.pdf Ozone Dr Broomfield responded to concerns raised by interested parties about the impact of the Proposed Development on ozone. He explained that there was no benefit or need for additional requirements or targets in respect of ozone as they would not be effective in addressing any ozone issues that arise on a regional basis. Monitoring devices Dr Broomfield responded to queries raised by interested parties about the type of monitoring equipment to be used. He explained that some digital devices are quite good for monitoring, however lower end of market products are usually of a poor quality, not calibrated, and have a range of other issues, and so results are generally unreliable.

	In the context of the Proposed Development, annual mean nitrogen dioxide concentrations need to be considered and diffusion tubes are useful monitoring devices for longer-term pollutant levels, they are inexpensive and give data that is of relevance to managing the impacts of the project.
7. Dust mitigation (a) Standard that would be enforceable, how monitored and managed to ensure standard is achieved, consequences when/if it is not.	**(a) Standard that would be enforceable, how monitored and managed to ensure standard is achieved, consequences when/if it is not** ESC has reached verbal agreement on an appropriate approach to dust mitigation and management of compliance. The general measures described for dust control are appropriate in overall terms but will require confirmation through the review and agreement of the DMMP. Mitigation measures should reflect the scale, nature and location of the proposed construction activities (Para 19.21 LIR [REP1-045]). ESC is content that if we approve the DMMP, and the Applicant carries out the works in accordance with the DMMP, then ESC does not need to approve the CEMPs. ESC has raised concerns about NRRM and there is now a cap of 15% of NRMMs not compliant with Stage V/IV. ESC is satisfied with that control mechanism. There are some matters subject to ongoing discussion. ESC would like to see the use of diesel generators kept to a minimum and we are asking for more details on when the MDS will be connected to mains electricity.
8. Stratford St Andrew and Woodbridge AQMA (a) Assessment of baseline conditions and subsequent	**(a) Assessment of baseline conditions and subsequent monitoring during construction** The Applicant considers that baseline monitoring is acceptable. The Applicant used diffusion tubes to establish the NO_2 concentrations for the Stratford St Andrew and Woodbridge existing year baseline (2018) and dispersion modelling to establish NO_2 concentrations for the future year baselines of 2023, 2028 and 2034, which is considered acceptable. The Applicant has committed to supporting baseline and subsequent air quality monitoring in the Stratford St Andrew and Woodbridge AQMA during construction (Paras 19.1, 19.14, 19.15, 19.30 LIR [REP1-045]).

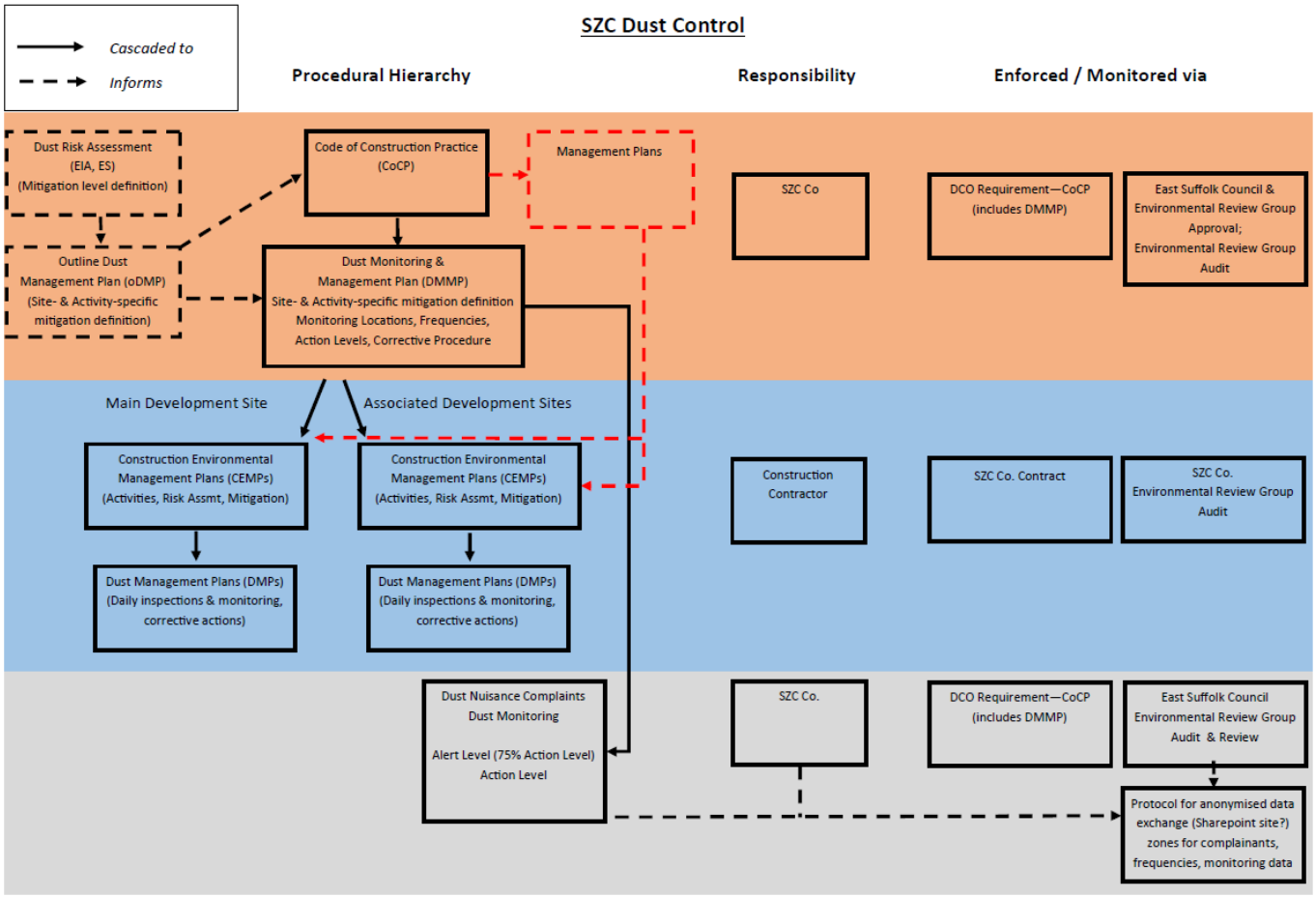
monitoring during construction (b) Whether mitigation offered would ensure policy requirements are met	**(b) Whether mitigation offered would ensure policy requirements are met** ESC is satisfied that the proposed mitigation is designed to achieve national and local policy requirements for compliance with air quality standards. <u>Background:</u> Initial concerns were raised about the Applicant's impact upon air quality within the Stratford St Andrew air quality management area (AQMA). The key issue was nitrogen dioxide (NO2) concentrations. While air pollution in Woodbridge AQMA was also a potential concern, the risk of impacts is lower than at Stratford St Andrew. Additional information has since been provided by the Applicant to address this concern. As a result, ESC considers that the scheme's impact in isolation and in-combination with the East Anglia One North and East Anglia Two windfarm development will be adequately mitigated. The additional information comprises: • A decrease in measured NO2 concentrations within the AQMA during 2019 compared to 2018. • Commitments made by both NNB Generation Company (SZC) Ltd (NNB) and Scottish Power Renewables (SPR) to a minimum proportion of the lowest emitting HGVs, referred to as Euro VI. As regards NNB, the key commitments are in 8.11 Code of Construction Practice Version 4 Part B page 31-32 and Part C page 25: "*Haulage contractors will seek to ensure that all road vehicles will comply with the requirements of Euro VI emission standards unless it is an exempt vehicle. A formal exemption process will be used for certain HDVs that may be exempt due to being a specialist vehicle; unforeseen circumstances; triviality (i.e. a small number of visits); or being used by a community / local supplier. Any exempt vehicle must meet Euro V standards where possible, and where not achieved additional information will be provided to the Environmental Review Group providing justification and how the impact of emissions from this vehicle will be mitigated. The totality of the exemptions will account for no more than 8% of individual vehicles on an annual basis. A registration scheme will be established requiring HDVs to*

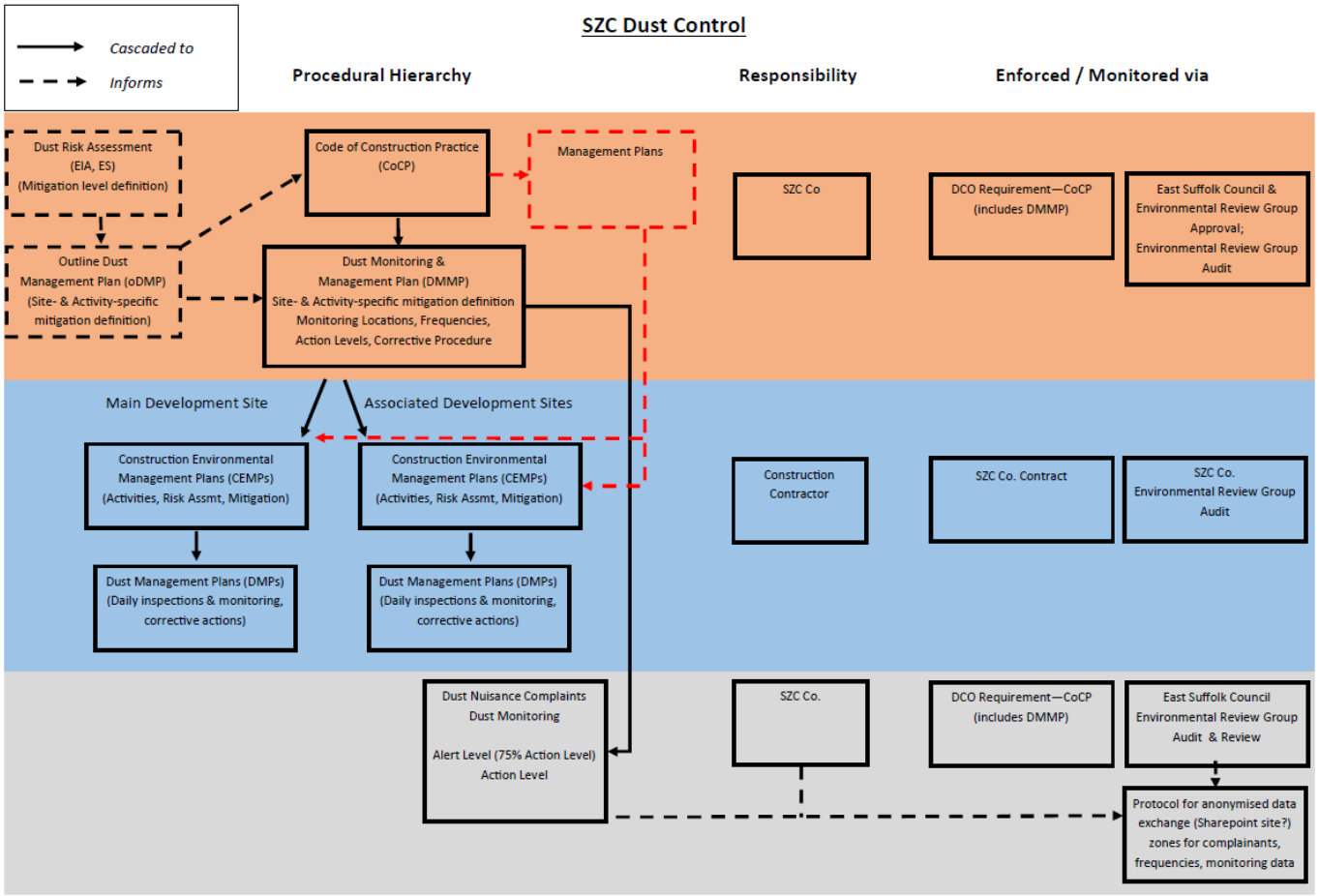
	be registered prior to being allowed access to the project sites, with reporting of the registration scheme performance to the Transport Working Group on an annual basis.." Furthermore, the CTMP provides for monitoring and management of HGV emissions classes to ensure compliance with this commitment, with a suitable mechanism for dealing with any impacts via the TRG and ERG. The CTMP will need to be updated to reflect the commitments in the CoCP in respect of controls on the emission standards of HDVs and NRMM. Pedestrian crossings are mitigation option under discussion at the A12 and B1122, which could potentially adversely impact air quality due to elevated emissions from stop-start traffic conditions introduced by the crossings. The applicant has verbally agreed to assess and support monitoring if aforementioned pedestrian crossings are progressed further.
9. Mitigation and Controls including; (a) The Code of Construction Practice (CoCP), (b) Outline Dust Management Plan (c) Construction Traffic Management Plan (CTMP)	**(a) The Code of Construction Practice (CoCP)** The mitigation and controls within the CoCP are mostly adequate, except for: • The CoCP states that "*Site plant and facilities will be powered from mains electrical sources, where reasonably practicable.* " (Part B p4, Part C p3). ESC has requested that site plant and facilities should use mains electrical supply at the earliest opportunity. ESC considers that the commitments in the CoCP are not sufficiently detailed, and do not guarantee that mains electrical power would be deployed at the earliest opportunity. ESC has requested confirmation of when in the construction programme this will occur. The Applicant is currently seeking to respond to ESC on this point. Para 19.21 LIR [REP1-045]. Further details should be provided on the steps that would be taken to make mains electrical power available at the Main Development Site and Offsite Associated Developments, in order to comply with ESC's request for mains electrical power to be deployed at the earliest opportunity.

(d) Construction Worker Travel Plan (CWTP) (e) Percentage of NMMP at highest standards of environmental control (f) Percentage of HDV at highest standards of environmental control Whether any additional requirements, would be necessary to address adverse air quality affects and whether the ExA should disapply the defence of statutory authority in whole or in part?	
	(b) Outline Dust Management Plan The mitigation measures and controls within the Outline Dust Management Plan are acceptable. While there is uncertainty over the location of construction dust generating activities and how this mitigation will be applied and managed by ESC, it is expected that this will be resolved by providing sufficient information on principles and zoning in the DMMP. The Applicant has committed to providing further details of the contents of the DMMP to manage these issues. The DMMP must be agreed before construction starts, and in time to inform contractor CEMPs.
	(c) Construction Traffic Management Plan (CTMP) The current version of the CTMP needs to be updated to reflect the most recent agreement on Euro VI controls set out in the CoCP (i.e., 8% cap on non-Euro VI vehicles). The proposed registration scheme for HDVs is considered a sufficient approach to monitor HDVs (paragraph 4.4.46 of Construction Traffic Management Plan [REP2-054]; Statement of Common Ground to be submitted at Deadline 7, Item AQZ).
	(d) Construction Worker Travel Plan (CWTP) The Councils accept that the proposed modal split will be secured by the Construction Worker Travel Plan and will be subject to robust monitoring during the construction phase, the details of which are being discussed with the applicant. This will ensure that construction worker vehicle movements remain within that assessed and will not contribute to a significant air quality impact The Applicant confirmed at the hearing its intention to increase the provision of electric charging points, which is welcomed by ESC.

	ESC seeks confirmation that all buses will be zero- or ultra-low emitting.
	(e) Percentage of NMMP at highest standards of environmental control The CoCP contains a commitment to a minimum of 85% stage IV/V NRMM (the highest standard of emissions control). Together with the monitoring scheme, guidelines to avoid placement near sensitive receptors, and expected details to be included in the DMMP, these are considered to be adequate controls
	(f) Percentage of HDV at highest standards of environmental control The CoCP contains a commitment to a minimum of 92% Euro VI compliant HDVs(the highest standard of emissions control). Together with the monitoring and management scheme in the CTMP, these are considered to be adequate controls. (CoCP Pages 31 and 32 [REP5-078]). • If Euro VI cannot be achieved, Euro V standard will be adopted. • If Euro V cannot be achieved justification will be provided to ESC with advice on how emissions from these vehicles will be mitigated. The Councils consider these controls on HDVs satisfactory to prevent exceedances of air quality objectives.
	Whether any additional requirements, would be necessary to address adverse air quality affects and whether the ExA should disapply the defence of statutory authority in whole or in part? ESC considers that no additional requirements to those discussed above would be necessary to address adverse air quality effects. ESC does not consider it necessary to disapply the defence of statutory authority in respect of air quality impacts, on the basis that potential impacts can be managed through the controls and management plans secured through the DCO (these comprise: the Code of Construction Practice, the outline Dust Management Plan, the Dust

Monitoring and Management Plan, contractor Construction Environmental Management Plans, and contractor Dust Management Plans). The interaction of these plans is demonstrated in a flowchart provided by the applicant which will be included in the DMMP (copied below for information).





10. Any other matters relevant to the agenda	
11. Close of Hearing	