

A black and white photograph of an industrial facility. In the foreground, a metal walkway with a grid pattern leads into the distance. To the right of the walkway is a railing made of vertical posts and horizontal bars. In the background, numerous large, white, curved pipes are visible, some running horizontally and others vertically. The sky is visible in the upper left corner. A dark vertical bar is on the right side of the image, containing the text 'Clyde Shanks', 'Chapter 13', and 'Noise'.

**Clyde
Shanks**

Chapter 13

Noise

13. Noise

Introduction

- 13.1 This Chapter provides an Addendum to Chapter 13 *Noise* of the original Environmental Statement (ES) submitted in March 2014 and subsequent ES Addendums in September 2014, August 2016, March 2019 and September 2023.
- 13.2 The purpose of this Chapter is to revisit the Noise Impact Assessment to take into consideration the noise impacts from the latest available predicted traffic flows on the local road network.
- 13.3 This Chapter should be read in conjunction with Chapter 13 *Noise* of the original ES as there are no changes to the predicted source noise levels from the proposed development, both in terms of predicted plant noise and on-site vehicular movements including those along the access road, from those previously considered.
- 13.4 The lead author of this addendum is a technically skilled acoustician (Beng Electroacoustics, CEng) with 30 years' experience covering a wide range of projects and is a Fellow of the Institute of Acoustics.

Background

- 13.5 The original ES issued in March 2014 provided an initial Noise Impact Assessment (NIA) of the proposed development in its' Chapter 13 *Noise* and Appendix 13.1, hereafter referred to as the 'original ES'. That assessment considered the predicted noise and vibration impacts from the proposed development on its surroundings, both during construction and operational use. It considered the potential impacts on identified sensitive receptors in terms of:
- Predicted noise and vibration levels from construction;
 - Noise from operation of the facilities; and
 - Noise from any change in road traffic associated with the development and its construction.
- 13.6 An Addendum to the initial March 2014 ES was later submitted in September 2014 in response to comments received from Antrim Borough Council and Newtownabbey Borough Council Environmental Health Departments and proposed changes to the Incinerator Bottom Ash processing arrangements.
- 13.7 Further noise evidence was also submitted post the Planning Appeals Commission (PAC) hearing (November 2016) which considered the cumulative noise impact of a nearby consented wind farm. It was emphasised at this time that it is not actually appropriate to combine wind farm noise with noise emitted from industrial sources due to the inherently different noise types, wind considerations and assessment methodologies. A cumulative impact assessment was however undertaken at the request of the PAC and the assessment assumed a worst-case scenario for each source.

13.8 In March 2019 a further Addendum was issued to update assessment methodologies where required, update the background sound survey and latest available traffic flows on the local road network, and to consider any additional cumulative assessment required in respect of consented wind turbines. That Addendum is hereafter referred to as the '2019 Addendum'.

13.9 In September 2023 a further Addendum was issued to update assessment methodologies where required, update the background sound survey and latest available traffic flows on the local road network, and to consider any additional cumulative assessment required in respect of consented wind turbines. That Addendum is hereafter referred to as the '2023 Addendum'.

Previous Assessments - Conclusions

13.10 The conclusions of the original ES 2014 and subsequent submissions confirmed that:

- The residual effects of the operational plant are assessed as being slightly adverse on the basis that it will be audible, albeit at a low level, at the nearest noise sensitive receptors and within recognised standards;
- When assessed against existing noise levels the impact of the additional traffic on the access route and Boghill Road is assessed as moderate adverse. Should detailed planning be granted for the new dwelling at 32a / 38 Boghill Road this would be designed and constructed with the knowledge that quarrying could resume and hence a moderate adverse assessment is considered appropriate;
- In respect of operational traffic noise, the net effect after mitigation is assessed as slight beneficial on properties fronting the access road and Boghill Road compared to the extant quarry permission. The proposed development will generate a defined and consistent level of traffic movements in contrast to quarrying activity with inevitable fluctuations;
- In terms of operational noise, the assessment of noise impact would be one of minor significance;
- Construction noise is considered to be no worse than when the site operated daily as a quarry and would be of limited duration. The closest property is 380m from the construction area, although properties directly fronting onto the Boghill Road improvements will experience disturbance albeit for a limited period and hence the residual effects are assessed as slight adverse;
- In terms of construction noise, the impact of the proposed scheme is assessed as minor significance, and
- The cumulative impact assessment with the nearby consented wind farm concluded that predicted night-time noise limits are not exceeded at nearby noise sensitive receptors as prescribed by ETSU R-97. All receptors were predicted to comfortably comply with the upper day and night-time limits. In addition, the cumulative impact was not found to lead to any breach of any standards or noise limits.

13.11 The conclusions of the March 2019 Addendum confirmed that:

- The re-assessment of the operational noise impact of the proposed scheme remained as per the previous conclusions identified in the original ES Chapter 13 *Noise*, i.e. of minor significance;
- The construction noise and vibration did not require re-assessment, therefore no changes to the original ES were proposed and the original ES Chapter 13 *Noise* remained valid, as such the associated impact remained as of minor significance, and
- The revised cumulative impact did not result in any breach of any standards or noise limits. The original conclusions therefore remain unchanged.

13.12 The conclusions of the September 2023 Addendum confirmed that:

- The updated background noise survey showed no change in daytime baseline noise levels, and similar night-time baseline noise levels;
- The revised opening year resulted in no change in noise impacts from changes in traffic;
- The assessment of operational noise from the site is in line with the conclusions of the original ES Chapter 13 *Noise*, i.e. of minor significance, and
- The original conclusions therefore remain unchanged.

Reasons for Addendum April 2025 - Noise

13.13 A transport review identified two additional committed developments to be included in the traffic assessment. The details are set out at Table 4 '2024 Committed Development Review' of Chapter 6 of the Transport Assessment – Review' (see Appendix 12.1) Therefore, this Addendum updates the noise assessment based on the new traffic data.

13.14 The predicted source noise levels from the proposed scheme, both in terms of plant noise and on-site vehicular movements (including on the access track) are not anticipated to have changed; consequently, this data from the original ES Chapter 13 remains relevant to this Addendum.

13.15 The predicted source noise levels from the wind turbine schemes proposed in the vicinity are also not anticipated to have changed as no changes to proposals have been submitted and no additional schemes have been proposed during the intervening period; consequently, data presented in the March 2019 Addendum remains relevant to this Addendum.

Methodology

13.16 This Addendum has adopted the same methodologies as used for the original ES (see Paragraphs 13.10 to 13.39 from the original ES) and updated in the March 2019 and September 2023 Addenda.

Road Traffic Noise

13.17 For these assessments the original ES significance ratings for road traffic noise impacts, as detailed below, have been retained based on the assessment that the long-term impact is predicted to be less than the short-term impact so their continued use is justified and allows readers to readily compare with previous assessments.

Arc21 original ES Table 13.1 – Semantic Scale for Rating Noise Impact & Significance Rating

Predicted Change In $L_{Aeq,T}$ or $L_{A10,T}$	Semantic Scale Rating	Significance Rating	
Decrease of more than 10.0 dB	Substantial	Major	Beneficial
Decrease of 5.0 – 9.9 dB	Moderate	Moderate	Beneficial
Decrease of 3.0 – 4.9 dB	Minor	Minor	Beneficial
Decrease of 0.1 – 2.9 dB	Slight	Negligible	~
0.0 dB	No Change	Negligible	~
Increase of 0.1 – 2.9 dB	Slight	Negligible	~
Increase of 3.0 – 4.9 dB	Minor	Minor	Adverse
Increase of 5.0 – 9.9 dB	Moderate	Moderate	Adverse
Increase of more than 10.0 dB	Substantial	Major	Adverse

Wind Turbine Sound

13.18 The cumulative impact assessment with nearby consented wind farms follows the same methodology and noise limits as the original ES 2014 and subsequent Addenda, namely ‘The Assessment and Rating of Noise from Wind Farms ETSU R-97’, published September 1996.

Baseline Sound Conditions: Future – Road Noise

13.19 In this Addendum, future road traffic noise levels from potential changes in traffic use the following assessment years: Opening Year 2030 and Design Year 2045.

Potential Noise Sensitive Receptors

13.20 An online review was undertaken in May 2024 of Northern Ireland’s Planning Portal¹ of planning applications submitted and/or approved in the intervening period since the September 2023 Addendum; this review identified that there are no additional noise sensitive receptors to consider for noise from the arc21 Site itself (including the access road). It remains appropriate to assess the eight previous receptors as the closest representative receptors to the proposed scheme, therefore Table 13.5 *Noise Sensitive Receptors* in the original ES remains valid.

13.21 As stated in the September 2023 addendum the previously proposed property No.32a / 38 Boghill Road has yet to be constructed. Calculations have been updated for this potential property due to its proximity to the scheme and the scheme’s access road.

Assessment: Predicted Environmental Effects and their Significance (Operation)

¹ Northern Ireland Public Register (planningsystemni.gov.uk)

Key Noise Sources

13.22 The key noise sources and materials used in the cladding of buildings remain unchanged and hence Table 13.6 – Table 13.8 in the original ES remain unchanged.

Noise Impact due to Operational Site

13.23 The source noise levels and assessed receptors have remained unchanged and hence the predictions of source noise levels at the receptors from the plant in Table 13.9 of the original ES Noise Chapter have not changed.

13.24 Baseline noise levels are not considered to have changed since the September 2023 Addendum, and the operational noise impact has not been re-assessed.

Noise Impact due to Operational Traffic

13.25 The predicted noise impact due to operational traffic has been revisited to take into consideration the new background sound levels, the latest traffic data on the local road network (Existing Year 2025), and the opening year of 2030.

Operational Assessment: Traffic - Site Access

13.26 The assessment of the impact of site access traffic has been updated although the traffic flows and speeds on the access road remain as previously assessed, the baseline sound levels have been updated to the 2023 survey levels. This reassessment is summarised in Table 13.1 below, which supersedes the original ES Table 13.12 and 2019 Addendum Table 9.6.

13.27 The significance rating assessed in Table 9.6 is as per the original ES criteria.

Table 13.1 Access Road vs Daytime Noise Levels (Table 13.12 / Table 9.6)

Receptor	Peak Hr Noise Level dB LAeq	Measured Day-time Background Level dB LAeq 2023	Combined dB LAeq	Difference	Significance
40 Boghill Road (Survey Location 04)	50.4	49.5	53.0	3.5 dB(A)	Minor Adverse
34 Boghill Road (Survey Location 04)	57.6	49.5	58.2	8.7 dB(A)	Moderate Adverse
Lapsed Outline Planning Property	52.0	43.5	52.6	9.1 dB(A)	Moderate Adverse

Receptor	Peak Hr Noise Level dB LAeq	Measured Day-time Background Level dB LAeq 2023	Combined dB LAeq	Difference	Significance
32a / 38 Boghill Road (Survey Location 05)					
32 Boghill Road (Survey Location 05)	46.2	43.5	48.1	4.6 dBA	Minor Adverse
26 Boghill Road (Survey Location 05)	46.6	43.5	48.3	4.8 dB(A)	Minor Adverse

13.28 The assessment shows no change from the September 2023 Addendum.

13.29 In the event that the proposed development is not implemented the established use of the site as a quarry with unrestricted planning permission has the potential to continue and the prospect of scaling up to meet market demand and the proposed Northstone Asphalt Plant traffic would also use this route if constructed.

Operational Assessment: Traffic – Local Road Network

13.30 The assessment of operational traffic noise on the local road network has been revisited to take into consideration updated traffic forecasts. Accordingly, Paragraphs 13.93 to 13.97 and Table 13.14 of the original ES, Paragraphs 9.42 and 9.43 and Table 9.8 of the March 2019 Addendum, and Paragraphs 9.42 & 9.43 and Table 9.8 of the March 2019 Addendum and Table 9.8 of the September 2023 Addendum are now updated by the following findings.

13.31 The revised assessment, summarised in Table 13.2, identifies that the change in noise level on each of the assessed road links is below +1dB. This was also the case in Table 13.14 of the original ES March 2014, Table 9.8 of the March 2019 Addendum, and Table 9.8 of the September 2023 Addendum, and as such the conclusion of the original assessment that the change in noise levels from scheme traffic on the local road network is not significant remains valid.

Table 13.2 Predicted Change in Noise Levels on Key Road Links (Table 13.14 / Table 9.8)

Link No.	Link Description	2045 without Development			2045 with Development			Predicted Noise – Without Development	Predicted Noise – With Development	Change in Noise level LA10,18 hr
		AAWT	% HGV	Speed MPH	AAWT	% HGV	Speed MPH			
1	Boghill Road	515	18.3	60	784	29.8	60	N/A	N/A	N/A
2	Hydepark Road	6731	8.1	60	7000	9.9	60	71.1	71.5	0.4
2a	Hydepark Road	6942	8.0	60	7214	9.8	60	71.2	71.7	0.4
3	Hightown Road	10657	3.9	40	10898	5.3	40	69.4	69.8	0.4
3a	Hightown Road	16546	3.8	40	16785	4.7	40	71.2	71.5	0.3
4	Mallusk Road	13217	4.5	40	13423	5.6	40	70.4	70.8	0.4
4a	Mallusk Road	17964	10.4	40	18172	11.2	40	73.1	73.3	0.2
5	Scullions Road	28874	10.1	40	29048	10.5	40	75.1	75.2	0.1

Description of Proposed Mitigation Measures (Operational)

13.32 No changes are proposed to the proposed noise mitigation measures in Paragraphs 13.98 to 13.100 of the original March 2014 ES.

Assessment: Cumulative Impact – Proposed Facility and Consented Local Windfarms

13.33 A site visit undertaken in November 2024 identified that none of the previously consented wind farms appear to be operational, and indeed appear to not be fully constructed yet, with only one site being observed to be under construction, see summary in Table 13.3 below.

Table 13.3 Wind Farms in the Vicinity of the Arc21 Site – Site Visit & Review Nov 2024

Application Ref / No. of Turbines	Location	Site Visit November 2024	GoogleEarth Check (image 24/04/2021)
T/2014/0478/F Granted 23 Dec 2015 5no. Wind Turbines	land approximately 1km North of No.71 Ballytoag Road Belfast Co Antrim BT14 8SS	Excavation underway for 5no. turbines, contractor on site, completion date unknown.	Indicates that a concrete base area may have been laid (either for 1 of the 5 turbines, or a construction compound)

Application Ref / No. of Turbines	Location	Site Visit November 2024	GoogleEarth Check (image 24/04/2021)
LA03/2016/0214/F Granted 20 Aug 2018 1no. Wind Turbine	approx. 430m Northeast of No 60 Ballyutoag Road Belfast	No turbine visible Access restrictions prevented confirming whether or not construction underway.	No evidence of construction
Z/2014/1553/F Granted 04 Nov 2015 1no. Wind Turbine	320 meters Southeast of 43 Flush Road Ballysillan, Upper Belfast	No turbine or construction visible from Hightown Road or Flush Road. Access restrictions prevented confirming whether or not construction underway.	Indicates that a concrete base area for this 1 turbine may have been laid
Z/2015/0010/F Granted 04 Nov 2015 1no. Wind Turbine	630 meters East/Southeast of 43 Flush Road, Ballysillan, Upper Belfast, BT14 8SJ	No turbine or construction visible from Hightown Road or Flush Road. Access restrictions prevented confirming whether or not construction underway.	Indicates that a concrete base area for this 1 turbine may have been laid

13.34 The online planning application review undertaken for this April 2025 ES addendum did not identify any additional consented or proposed local windfarms. As such, the assessment of the cumulative impact of the Proposed Facility and Consented Local Windfarms presented in the 2019 and 2023 Addenda remains unchanged.

Conclusions

13.35 The original ES March 2014 and the March 2019 and September 2023 ES Addendums considered the potential noise and vibration impacts from the proposed development on its surroundings, both during construction and when operational.

13.36 In terms of operational noise, the original ES March 2014 assessed that the noise impact would be of Minor Significance. This re-assessment, incorporating updated traffic flows, concludes that the operational noise impact remains unchanged.

13.37 In terms of construction noise and vibration, the original ES March 2014 assessed the impact of the proposed scheme as having Minor Significance. Construction impacts have not been re-assessed, and the conclusions in ES Chapter 13 Noise remain valid and unchanged.