

Cottam Solar Project

Environmental Statement

Appendix 15.3: Assessment of Key Effects

Prepared by Tetra Tech Limited
January 2023

PINS Ref: EN010133
Document reference: APP/C6.3.15.3
APFP Regulation 5(2)(a)



APPENDIX 15.3 – ASSESSMENT OF KEY EFFECTS

15.3.1 Construction Noise Assessment

15.3.1.1 Cottam 1

Noise levels from potential construction activities associated with the development of the site have been assessed in accordance with BS 5228 criteria which indicates if a significant effect is likely to occur at noise sensitive receptors.

This assessment has been undertaken in order to establish the maximum external noise levels at neighbouring properties for the proposed construction activity of the site and whether typical plant and activities will be within these levels.

The table below shows predicted levels of construction noise at existing noise sensitive properties for comparison with the BS 5228-1 noise limit criteria of 65 dBA.

Table 15.3.1 Construction Noise Assessment Results (ABC Method)

Ref	Construction Noise Level (dBA)	Criteria (dBA)	Within Recommended Noise Limit
R01	51.9	65.0	Yes
R02	46.0	65.0	Yes
R03	42.4	65.0	Yes
R04	43.1	65.0	Yes
R05	36.5	65.0	Yes
R06	39.9	65.0	Yes
R07	31.1	65.0	Yes
R08	37.6	65.0	Yes
R09	53.4	65.0	Yes
R10	52.9	65.0	Yes
R11	45.6	65.0	Yes
R12	41.9	65.0	Yes
R13	36.2	65.0	Yes
R14	47.7	65.0	Yes
R15	35.9	65.0	Yes
R16	40.8	65.0	Yes
R17	44.7	65.0	Yes
R18	43.8	65.0	Yes
R19	56.3	65.0	Yes
R20	30.3	65.0	Yes
R21	31.6	65.0	Yes
R22	26.4	65.0	Yes
R23	29.5	65.0	Yes

Ref	Construction Noise Level (dBA)	Criteria (dBA)	Within Recommended Noise Limit
R24	54.9	65.0	Yes
R25	43.7	65.0	Yes
R26	42.1	65.0	Yes
R27	23.0	65.0	Yes
R28	46.9	65.0	Yes
R29	19.6	65.0	Yes
R30	49.2	65.0	Yes
R31	63.1	65.0	Yes
R32	44.3	65.0	Yes
R33	31.4	65.0	Yes
R34	29.9	65.0	Yes
R35	41.4	65.0	Yes
R36	25.4	65.0	Yes
R37	30.1	65.0	Yes
R38	44.2	65.0	Yes
R39	50.7	65.0	Yes
R40	47.3	65.0	Yes
R41	38.6	65.0	Yes
R42	39.9	65.0	Yes
R43	43.9	65.0	Yes
R44	27.4	65.0	Yes
R45	0.0	65.0	Yes
R46	32.5	65.0	Yes
R47	51.1	65.0	Yes
R48	50.6	65.0	Yes
R49	52.3	65.0	Yes
R50	29.2	65.0	Yes
R51	52.8	65.0	Yes
R52	32.2	65.0	Yes
R53	27.7	65.0	Yes
R54	44.0	65.0	Yes
R55	49.5	65.0	Yes
R56	44.4	65.0	Yes
R57	37.6	65.0	Yes
R58	38.7	65.0	Yes
R59	43.3	65.0	Yes
R60	49.5	65.0	Yes

Ref	Construction Noise Level (dBA)	Criteria (dBA)	Within Recommended Noise Limit
R61	49.5	65.0	Yes
R62	52.0	65.0	Yes
R63	48.7	65.0	Yes
R64	35.4	65.0	Yes
R65	36.4	65.0	Yes
R66	41.8	65.0	Yes

The results show that the predicted construction noise levels at all receptors are within the 65 dB(A) noise level limit. None of the assessed receptors will therefore exceed the NOEL. The magnitude of impact is assessed as **negligible**, and the sensitivity of the receptors have been assessed as **high**. Therefore, the magnitude of change is **moderate/minor**.

15.3.1.2 Cottam 2

Noise levels from potential construction activities associated with the development of the site have been assessed in accordance with BS 5228 criteria which indicates if a significant effect is likely to occur at noise sensitive receptors.

This assessment has been undertaken in order to establish the maximum external noise levels at neighbouring properties for the proposed construction activity of the site and whether typical plant and activities will be within these levels.

The table below shows predicted levels of construction noise at existing noise sensitive properties for comparison with the BS 5228-1 noise limit criteria of 65 dBA.

Table 15.3.2 Construction Noise Assessment Results (ABC Method) – Cottam 2

Ref	Construction Noise Level (dBA)	Criteria (dBA)	Within Recommended Noise Limit
R01	53.7	65.0	Yes
R02	55.5	65.0	Yes
R03	36.5	65.0	Yes
R04	55.4	65.0	Yes
R05	40.0	65.0	Yes
R06	41.6	65.0	Yes
R07	43.9	65.0	Yes
R08	31.8	65.0	Yes
R09	41.6	65.0	Yes
R10	29.7	65.0	Yes
R11	30.5	65.0	Yes

The results show that the predicted construction noise levels at all receptors are within the 65 dB(A) noise level limit. None of the assessed receptors will therefore exceed the NOEL. The magnitude of

impact is assessed as **negligible**, and the sensitivity of the receptors have been assessed as **high**. Therefore, the magnitude of change is **moderate/minor**.

15.3.1.3 Cottam 3a

Noise levels from potential construction activities associated with the development of the site have been assessed in accordance with BS 5228 criteria which indicates if a significant effect is likely to occur at noise sensitive receptors.

This assessment has been undertaken in order to establish the maximum external noise levels at neighbouring properties for the proposed construction activity of the site and whether typical plant and activities will be within these levels.

The table below shows predicted levels of construction noise at existing noise sensitive properties for comparison with the BS 5228-1 noise limit criteria of 65 dBA.

Table 15.3.3 Construction Noise Assessment Results (ABC Method) – Cottam 3a

Ref	Construction Noise Level (dBA)	Criteria (dBA)	Within Recommended Noise Limit
R01	55.1	65.0	Yes
R02	55.6	65.0	Yes
R03	47.6	65.0	Yes
R04	58.5	65.0	Yes
R05	34.8	65.0	Yes
R06	36.7	65.0	Yes
R07	40.7	65.0	Yes
R08	43.9	65.0	Yes
R09	35.6	65.0	Yes
R10	41.7	65.0	Yes
R11	61.7	65.0	Yes
R12	42.9	65.0	Yes
R13	47.0	65.0	Yes
R14	42.7	65.0	Yes
R15	41.1	65.0	Yes

The results show that the predicted construction noise levels at all receptors are within the 65 dB(A) noise level limit. None of the assessed receptors will therefore exceed the NOEL. The magnitude of impact is assessed as **negligible**, and the sensitivity of the receptors have been assessed as **high**. Therefore, the magnitude of change is **moderate/minor**.

15.3.1.4 Cottam 3b

Noise levels from potential construction activities associated with the development of the site have been assessed in accordance with BS 5228 criteria which indicates if a significant effect is likely to occur at noise sensitive receptors.

This assessment has been undertaken in order to establish the maximum external noise levels at neighbouring properties for the proposed construction activity of the site and whether typical plant and activities will be within these levels.

The table below shows predicted levels of construction noise at existing noise sensitive properties for comparison with the BS 5228-1 noise limit criteria of 65 dBA.

Table 15.3.4 Construction Noise Assessment Results (ABC Method) – Cottam 3b

Ref	Construction Noise Level (dBA)	Criteria (dBA)	Within Recommended Noise Limit
R01	43.0	65.0	Yes
R02	37.5	65.0	Yes
R03	39.7	65.0	Yes
R04	44.2	65.0	Yes
R05	34.8	65.0	Yes
R06	50.7	65.0	Yes
R07	34.8	65.0	Yes
R08	43.3	65.0	Yes
R09	43.6	65.0	Yes
R10	37.9	65.0	Yes
R11	38.1	65.0	Yes
R12	21.9	65.0	Yes
R13	37.4	65.0	Yes
R14	33.4	65.0	Yes

The results show that the predicted construction noise levels at all receptors are within the 65 dB(A) noise level limit. None of the assessed receptors will therefore exceed the NOEL. The magnitude of impact is assessed as **negligible**, and the sensitivity of the receptors have been assessed as **high**. Therefore, the magnitude of change is **moderate/minor**.

15.3.1.5 Cottam Cable Route

Noise levels from potential construction activities associated with the development of the cable route have been assessed in accordance with BS 5228 criteria which indicates if a significant effect is likely to occur at noise sensitive receptors.

This assessment has been undertaken in order to establish the maximum external noise levels at neighbouring properties for the proposed construction activity and whether typical plant and activities will be within these levels.

The table below shows predicted levels of construction noise at existing noise sensitive properties for comparison with the BS 5228-1 noise limit criteria of 65 dBA.

Table 15.3.5 Construction Noise Assessment Results (ABC Method) – Cottam Cable Route

Ref	Construction Noise Level (dBA)	Criteria (dBA)	Within Recommended Noise Limit
CR01	28.0	65.0	Yes
CR02	39.4	65.0	Yes
CR03	53.5	65.0	Yes
CR04	61.4	65.0	Yes
CR05	54.7	65.0	Yes
CR06	70.6	65.0	No
CR07	46.2	65.0	Yes
CR08	77.8	65.0	No
CR09	60.6	65.0	Yes
CR10	46.9	65.0	Yes
CR11	53.4	65.0	Yes
CR12	49.6	65.0	Yes
CR13	38.2	65.0	Yes
CR14	38.6	65.0	Yes
CR15	42.4	65.0	Yes

The results show that the predicted construction noise levels at all receptors are within the 65 dB(A) noise level limit, with the exception of receptors CR06 and CR08. The magnitude of effect at CR06 and CR08 is assessed as **major**, however when determining the magnitude of impact from the magnitude of effect for construction noise it is necessary to consider the duration of the construction activities.

Given that construction activities for the cable route are transient, it is considered unlikely that a major impact would be experienced for any prolonged duration due to the temporary nature of construction operations, therefore, Best Practicable Means (BPM) will be implemented as described in Paragraph 15.6.3 of Chapter 15.

15.3.2 Construction Vibration Assessment

15.3.2.1 Cottam 1

As explained in ES chapter 15, potential levels of vibration from vibratory piling have been estimated using the formulae presented in BS 5228 and the distances to nearest sections of piling activities.

Table 15.3.6 presents the predicted Peak Particle Velocity (PPV) levels for the piling activities, at the nearest assessed receptor.

Table 15.3.6 Predicted Vibration Levels

Ref	Construction Activity, Closest Distance to Receptor. (m)	Peak Particle Velocity, mm/s
R31	55	0.33

Vibration due to piling operations during the construction of the PV panel framework is likely to be above the level of perception at the nearest assessed receptor (0.3mm/s as set out in Table 15.6 of ES Chapter 15) but below the level likely to cause complaint (1.0 mm/s). Therefore, the magnitude of effect is anticipated to be **minor** at all residential receptors and therefore the magnitude of change is **moderate**.

15.3.2.2 Cottam 2

As explained in ES chapter 15, potential levels of vibration from vibratory piling have been estimated using the formulae presented in BS 5228 and the distances to nearest sections of piling activities.

Table 15.3.7 presents the predicted Peak Particle Velocity (PPV) levels for the piling activities, at the nearest assessed receptor.

Table 15.3.7 Predicted Vibration Levels

Ref	Construction Activity, Closest Distance to Receptor. (m)	Peak Particle Velocity, mm/s
R02	75	0.22

Vibration due to piling operations during the construction of the PV panel framework is likely to be below the level of perception at the nearest assessed receptor (0.3mm/s as set out in Table 15.6 of ES Chapter 15). Therefore, the magnitude of effect is anticipated to be **negligible** at all residential receptors and therefore the magnitude of change is **moderate/minor**.

15.3.2.3 Cottam 3a

As explained in ES chapter 15, potential levels of vibration from vibratory piling have been estimated using the formulae presented in BS 5228 and the distances to nearest sections of piling activities.

Table 15.3.8 presents the predicted Peak Particle Velocity (PPV) levels for the piling activities, at the nearest assessed receptor.

Table 15.3.8 Predicted Vibration Levels

Ref	Construction Activity, Closest Distance to Receptor. (m)	Peak Particle Velocity, mm/s
R11	65	0.26

Vibration due to piling operations during the construction of the PV panel framework is likely to be below the level of perception at the nearest assessed receptor (0.3mm/s as set out in Table 15.6 of ES Chapter 15). Therefore, the magnitude of effect is anticipated to be **negligible** at all residential receptors and therefore the magnitude of change is **moderate/minor**.

15.3.2.3 Cottam 3b

As explained in ES chapter 15, potential levels of vibration from vibratory piling have been estimated using the formulae presented in BS 5228 and the distances to nearest sections of piling activities.

Table 15.3.9 presents the predicted Peak Particle Velocity (PPV) levels for the piling activities, at the nearest assessed receptor.

Table 15.3.9 Predicted Vibration Levels

Ref	Construction Activity, Closest Distance to Receptor. (m)	Peak Particle Velocity, mm/s
R06	100	0.15

Vibration due to piling operations during the construction of the PV panel framework is likely to be below the level of perception at the nearest assessed receptor (0.3mm/s as set out in Table 15.6 of ES Chapter 15). Therefore, the magnitude of effect is anticipated to be **negligible** at all residential receptors and therefore the magnitude of change is **moderate/minor**.

15.3.2.4 Cottam Cable Route

As explained in ES chapter 15, potential levels of vibration from vibratory compaction have been estimated using the formulae presented in BS 5228 and the distances to nearest sections of compaction activities.

Using the Vibratory compaction (steady state) formula from Table E.1 of BS 5228-2, the minimum distance from receptor to compaction activity that will result in a greater than negligible effect is equal to 38m. The only assessed receptor that falls within this category is receptor CR08 which is approximately 20m from the illustrative cable route. The estimated PPV value for a receptor at a distance of 20m from a compaction activity is 0.75mm/s which, as set out in Table 15.6 of the ES, corresponds to an effect level of **minor**. The receptor sensitivity is high therefore, the magnitude of change is **moderate** and not significant.

15.3.4 Construction Traffic Assessment

15.3.4.1 Cottam 1

A quantitative assessment has been undertaken to establish the change in road traffic noise level due to increased vehicle movements as a result of the Scheme. The table below shows the results of the construction traffic noise assessment comparing L_{A10} noise levels from the 'with' and 'without' proposed construction traffic flows. The anticipated traffic flows have been obtained from Chapter 14 -Transport and Access. Traffic flows along the A1500 or Ingham Lane/Stow Lane have been considered in the table below.

Table 15.3.10 Construction Traffic Assessment – Cottam 1

Ref	Baseline dB $L_{A10,18hr}$	Proposed dB $L_{A10,18hr}$	Level Difference dB
R01	66.1	66.2	0.1
R02	62.1	62.2	0.1
R03	68.5	68.6	0.1
R04	64.8	64.9	0.1
R05	60.1	60.2	0.1
R06	51.8	53.2	1.4
R07	49.8	51.2	1.4
R08	52.5	53.6	1.1
R09	52.2	53.7	1.5
R10	59.8	61.2	1.4

When compared with the criteria in Table 15.7 of the ES Chapter, the change in road traffic noise level as a result of the increased vehicle movements associated with the construction phase of the Scheme is predicted to have a **Minor** effect at all sensitive receptors and therefore the magnitude of change is **moderate**.

15.3.4.2 Cottam 2

A quantitative assessment has been undertaken to establish the change in road traffic noise level due to increased vehicle movements as a result of the Scheme. The table below shows the results of the construction traffic noise assessment comparing L_{A10} noise levels from the 'with' and 'without' anticipated construction traffic flows. The anticipated traffic flows have been obtained from Chapter 14 -Transport and Access. Traffic flows along the A631 have been considered in the table below.

Table 15.3.11 Construction Traffic Assessment – Cottam 2

Ref	Baseline dB $L_{A10,18hr}$	Proposed dB $L_{A10,18hr}$	Level Difference dB
R01	66.3	66.5	0.2

Ref	Baseline dB L _{A10,18hr}	Proposed dB L _{A10,18hr}	Level Difference dB
R02	67.3	67.4	0.1
R03	67.0	67.0	0.0
R04	64.2	64.2	0.0
R05	66.1	65.8	-0.3

When compared with the criteria in Table 15.7 of the ES Chapter, the change in road traffic noise level as a result of the increased vehicle movements associated with the construction phase of the Scheme is predicted to have a **Negligible** effect at all sensitive receptors and therefore the magnitude of change is **moderate/minor**.

15.3.4.3 Cottam 3a

A quantitative assessment has been undertaken to establish the change in road traffic noise level due to increased vehicle movements as a result of the Scheme. The table below shows the results of the construction traffic noise assessment comparing L_{A10} noise levels from the 'with' and 'without' anticipated construction traffic flows. The anticipated traffic flows have been obtained from Chapter 14 -Transport and Access. Traffic flows along the B1205 have been considered in the table below.

Table 15.3.12 Construction Traffic Assessment – Cottam 3a

Ref	Baseline dB L _{A10,18hr}	Proposed dB L _{A10,18hr}	Level Difference dB
R01	64.7	64.8	0.1
R02	68.7	68.8	0.1
R03	63.3	63.4	0.1
R04	69.0	69.1	0.1
R05	67.4	67.5	0.1
R06	61.1	61.4	0.3
R07	63.5	63.8	0.3
R08	38.8	39.1	0.3

When compared with the criteria in Table 15.7 of the ES Chapter, the change in road traffic noise level as a result of the increased vehicle movements associated with the construction phase of the Scheme is predicted to have a **Negligible** effect at all sensitive receptors and therefore the magnitude of change is **moderate/minor**.

15.3.4.4 Cottam 3b

A quantitative assessment has been undertaken to establish the change in road traffic noise level due to increased vehicle movements as a result of the Scheme. The table below shows the results of the construction traffic noise assessment comparing L_{A10} noise levels from the 'with' and 'without' anticipated

construction traffic flows. The anticipated traffic flows have been obtained from Chapter 14 -Transport and Access. Traffic flows along the B1205 have been considered in the table below.

Table 15.3.13 Construction Traffic Assessment – Cottam 3b

Ref	Baseline dB $L_{A10,18hr}$	Proposed dB $L_{A10,18hr}$	Level Difference dB
R01	64.7	64.8	0.1
R02	68.7	68.8	0.1
R03	63.3	63.4	0.1
R04	69.0	69.1	0.1
R05	67.4	67.5	0.1
R06	61.1	61.4	0.3
R07	63.5	63.8	0.3
R08	38.8	39.1	0.3

When compared with the criteria in Table 15.7 of the ES Chapter, the change in road traffic noise level as a result of the increased vehicle movements associated with the construction phase of the Scheme is predicted to have a **Negligible** effect at all sensitive receptors and therefore the magnitude of change is **moderate/minor**.

15.3.5 Operational Noise Assessment

15.3.5.1 Cottam 1

Table 15.3.14 BS 4142 Proposed Operational Noise Assessment – Cottam 1

Location	Existing Measured Background L_{A90}		Rating level from plant ($L_{A,Tr}$)		BS 4142 Score	
	Daytime	Night-time	Daytime	Night-time	Daytime	Night-time
R01	31	17	32	33	1	16
R02	31	17	30	30	-1	13
R03	33	23	29	30	-4	7
R04	33	23	32	32	-1	9
R05	33	23	31	32	-2	9
R06	33	23	27	29	-6	6
R07	28	20	26	27	-3	7
R08	31	17	26	29	-5	12
R09	31	17	37	38	6	21
R10	31	17	35	37	4	20
R11	31	17	28	29	-3	12
R12	29	17	25	26	-4	9
R13	29	17	22	23	-7	6
R14	29	17	26	27	-3	10
R15	31	17	27	31	-5	14
R16	31	17	28	31	-4	14

Location	Existing Measured Background		Rating level		BS 4142	
	L _{A90}		from plant (L _{A,T})		Score	
	Daytime	Night-time	Daytime	Night-time	Daytime	Night-time
R17	31	17	31	32	0	15
R18	31	17	30	31	-1	14
R19	31	17	36	39	5	22
R20	31	17	16	17	-15	0
R21	31	17	23	23	-9	6
R22	31	17	20	23	-11	6
R23	31	17	22	25	-9	8
R24	31	17	34	35	3	18
R25	31	17	27	29	-4	12
R26	31	17	26	27	-5	10
R27	31	17	15	15	-16	-2
R28	31	17	31	32	0	15
R29	31	17	12	13	-19	-4
R30	31	17	35	38	4	21
R31	31	17	38	39	7	22
R32	31	17	37	38	6	21
R33	31	17	24	24	-7	7
R34	31	17	23	22	-8	5
R35	28	20	26	26	-2	6
R36	28	20	15	19	-13	-1
R37	29	17	14	15	-15	-2
R38	31	17	26	27	-5	10
R39	31	17	33	35	2	18
R40	31	17	34	34	3	17
R41	31	17	22	25	-10	8
R42	31	17	25	30	-6	13
R43	28	20	27	29	-1	9
R44	28	20	17	16	-11	-4
R45	33	23	0	0	-33	-23
R46	33	23	27	28	-6	5
R47	33	23	33	34	0	11
R48	33	23	32	32	-1	9
R49	33	23	33	34	0	11
R50	33	23	18	23	-15	0
R51	33	23	33	33	0	10
R52	29	17	18	19	-11	2
R53	29	17	15	17	-14	0
R54	29	17	26	28	-3	11
R55	29	17	30	32	1	15
R56	29	17	25	25	-4	8
R57	29	17	22	24	-7	7
R58	29	17	19	23	-10	6
R59	29	17	29	30	0	13
R60	29	17	21	22	-8	5

Location	Existing Measured Background		Rating level		BS 4142	
	L _{A90}		from plant (L _{A,Tf})		Score	
	Daytime	Night-time	Daytime	Night-time	Daytime	Night-time
R61	29	17	23	25	-6	8
R62	29	17	25	26	-4	9
R63	29	17	23	25	-6	8
R64	29	17	18	21	-12	4
R65	30	19	23	27	-7	8
R66	31	17	25	28	-6	11

The assessment above shows that noise levels from the solar farm are predicted to be up to +7 dB above the existing background noise levels at the closest sensitive receptors during the daytime and up to +22 dB during the night-time, which as set out in Table 15.8 of the ES, is an indication of a **major** effect and therefore **major** significance.

Noise Intrusion Assessment – Cottam 1

Internal noise levels, at nearby sensitive receptors from all sources of potential noise associated with the Scheme have been assessed both with windows open, where a reduction from a partially open window of 10 dB has been used, and with windows closed where an assumption of single glazing with a sound reduction of 30 dB has been used.

Table 15.3.15 Daytime Noise Intrusion Levels L_{Aeq} 1 hour – Cottam 1

Location	External L _{Aeq} Noise Level at 1 metre from façade	Internal L _{Aeq} with windows-open	Internal L _{Aeq} with windows-closed	Criteria L _{Aeq}
R01	30.0	20.0	0.0	35
R02	27.7	17.7	0.0	35
R03	27.0	17.0	0.0	35
R04	30.1	20.1	0.1	35
R05	28.7	18.7	0.0	35
R06	25.4	15.4	0.0	35
R07	23.7	13.7	0.0	35
R08	24.0	14.0	0.0	35
R09	35.3	25.3	5.3	35
R10	33.4	23.4	3.4	35
R11	26.0	16.0	0.0	35
R12	23.2	13.2	0.0	35
R13	20.1	10.1	0.0	35
R14	24.1	14.1	0.0	35
R15	24.6	14.6	0.0	35
R16	25.6	15.6	0.0	35
R17	29.4	19.4	0.0	35
R18	27.8	17.8	0.0	35
R19	36.5	26.5	6.5	35
R20	14.6	4.6	0.0	35
R21	20.6	10.6	0.0	35
R22	17.6	7.6	0.0	35

Location	External L _{Aeq} Noise Level at 1 metre from façade	Internal L _{Aeq} with windows-open	Internal L _{Aeq} with windows-closed	Criteria L _{Aeq}
R23	20.4	10.4	0.0	35
R24	32.2	22.2	2.2	35
R25	24.8	14.8	0.0	35
R26	24.3	14.3	0.0	35
R27	12.7	2.7	0.0	35
R28	29.3	19.3	0.0	35
R29	10.3	0.3	0.0	35
R30	35.0	25.0	5.0	35
R31	36.5	26.5	6.5	35
R32	35.4	25.4	5.4	35
R33	21.7	11.7	0.0	35
R34	20.9	10.9	0.0	35
R35	23.8	13.8	0.0	35
R36	13.1	3.1	0.0	35
R37	12.1	2.1	0.0	35
R38	24.1	14.1	0.0	35
R39	31.1	21.1	1.1	35
R40	31.6	21.6	1.6	35
R41	19.5	9.5	0.0	35
R42	23.2	13.2	0.0	35
R43	25.4	15.4	0.0	35
R44	15.1	5.1	0.0	35
R45	-2.5	0.0	0.0	35
R46	25.3	15.3	0.0	35
R47	31.0	21.0	1.0	35
R48	29.6	19.6	0.0	35
R49	30.9	20.9	0.9	35
R50	15.9	5.9	0.0	35
R51	30.8	20.8	0.8	35
R52	15.7	5.7	0.0	35
R53	13.0	3.0	0.0	35
R54	24.2	14.2	0.0	35
R55	28.4	18.4	0.0	35
R56	23.0	13.0	0.0	35
R57	20.4	10.4	0.0	35
R58	17.1	7.1	0.0	35
R59	26.9	16.9	0.0	35
R60	18.7	8.7	0.0	35
R61	21.4	11.4	0.0	35
R62	23.0	13.0	0.0	35
R63	21.2	11.2	0.0	35
R64	15.5	5.5	0.0	35
R65	20.9	10.9	0.0	35
R66	23.4	13.4	0.0	35

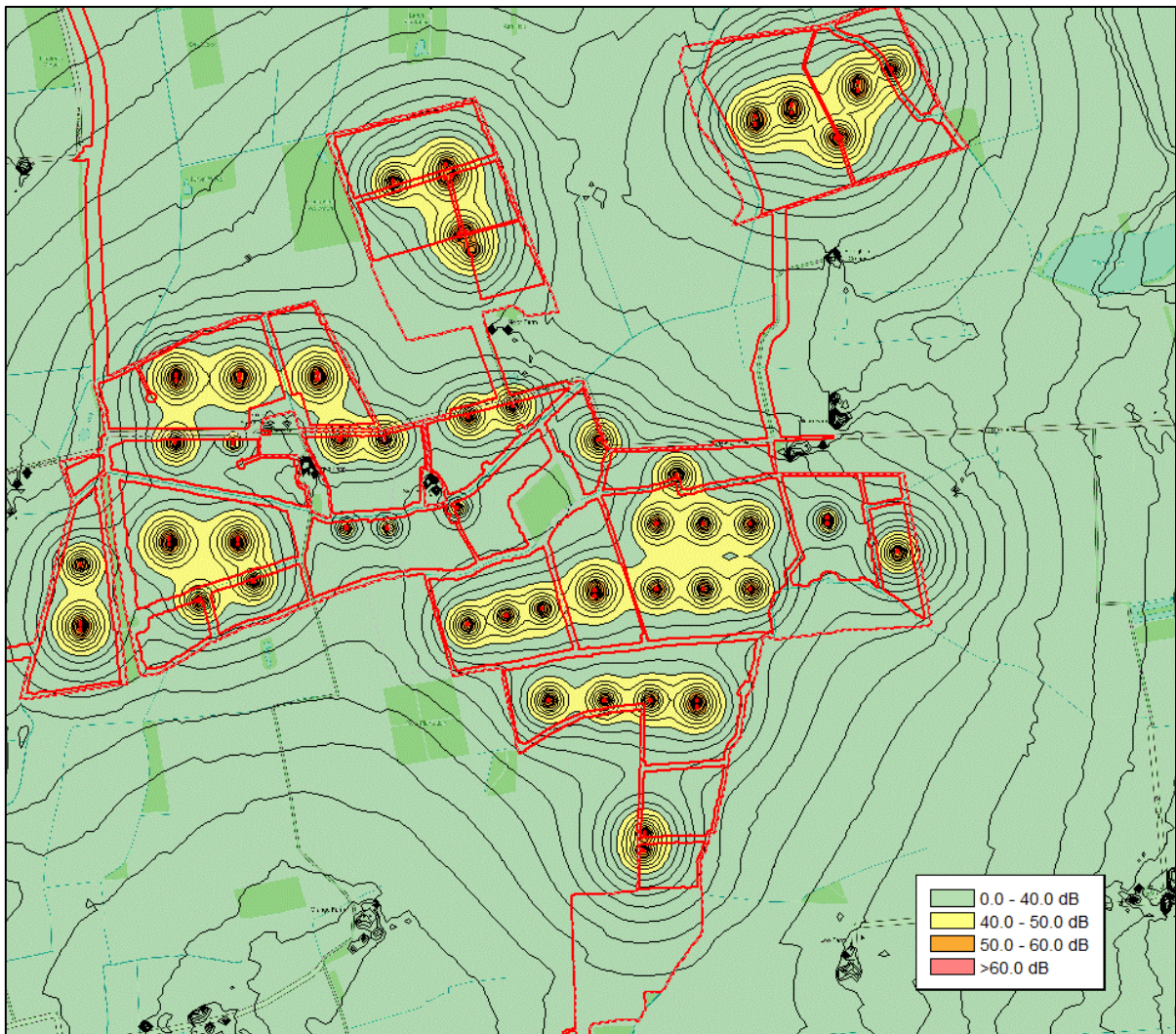
Table 15.3.16 Night-time Noise Intrusion Levels L_{Aeq} 15mins – Cottam 1

Location	External L_{Aeq} Noise Level at 1 metre from façade	Internal L_{Aeq} with windows-open	Internal L_{Aeq} with windows-closed	Criteria L_{Aeq}
R01	30.6	20.6	0.6	30
R02	28.3	18.3	0.0	30
R03	28.0	18.0	0.0	30
R04	30.1	20.1	0.1	30
R05	29.8	19.8	0.0	30
R06	27.2	17.2	0.0	30
R07	25.0	15.0	0.0	30
R08	27.2	17.2	0.0	30
R09	36.0	26.0	6.0	30
R10	35.0	25.0	5.0	30
R11	26.6	16.6	0.0	30
R12	23.9	13.9	0.0	30
R13	20.7	10.7	0.0	30
R14	24.9	14.9	0.0	30
R15	28.6	18.6	0.0	30
R16	29.0	19.0	0.0	30
R17	29.6	19.6	0.0	30
R18	28.5	18.5	0.0	30
R19	37.2	27.2	7.2	30
R20	15.1	5.1	0.0	30
R21	21.1	11.1	0.0	30
R22	21.1	11.1	0.0	30
R23	22.5	12.5	0.0	30
R24	32.6	22.6	2.6	30
R25	26.6	16.6	0.0	30
R26	25.1	15.1	0.0	30
R27	13.1	3.1	0.0	30
R28	30.0	20.0	0.0	30
R29	10.6	0.6	0.0	30
R30	36.4	26.4	6.4	30
R31	36.9	26.9	6.9	30
R32	35.9	25.9	5.9	30
R33	22.2	12.2	0.0	30
R34	20.4	10.4	0.0	30
R35	24.1	14.1	0.0	30
R36	17.3	7.3	0.0	30
R37	12.9	2.9	0.0	30
R38	25.0	15.0	0.0	30
R39	32.8	22.8	2.8	30
R40	32.1	22.1	2.1	30
R41	22.5	12.5	0.0	30
R42	28.2	18.2	0.0	30
R43	26.9	16.9	0.0	30
R44	13.7	3.7	0.0	30
R45	-2.2	0.0	0.0	30

Location	External L_{Aeq} Noise Level at 1 metre from façade	Internal L_{Aeq} with windows-open	Internal L_{Aeq} with windows-closed	Criteria L_{Aeq}
R46	25.6	15.6	0.0	30
R47	31.5	21.5	1.5	30
R48	29.5	19.5	0.0	30
R49	31.8	21.8	1.8	30
R50	20.7	10.7	0.0	30
R51	30.8	20.8	0.8	30
R52	17.0	7.0	0.0	30
R53	14.8	4.8	0.0	30
R54	26.3	16.3	0.0	30
R55	29.6	19.6	0.0	30
R56	23.3	13.3	0.0	30
R57	21.9	11.9	0.0	30
R58	21.0	11.0	0.0	30
R59	27.5	17.5	0.0	30
R60	20.2	10.2	0.0	30
R61	23.0	13.0	0.0	30
R62	24.4	14.4	0.0	30
R63	23.3	13.3	0.0	30
R64	19.1	9.1	0.0	30
R65	24.6	14.6	0.0	30
R66	26.0	16.0	0.0	30

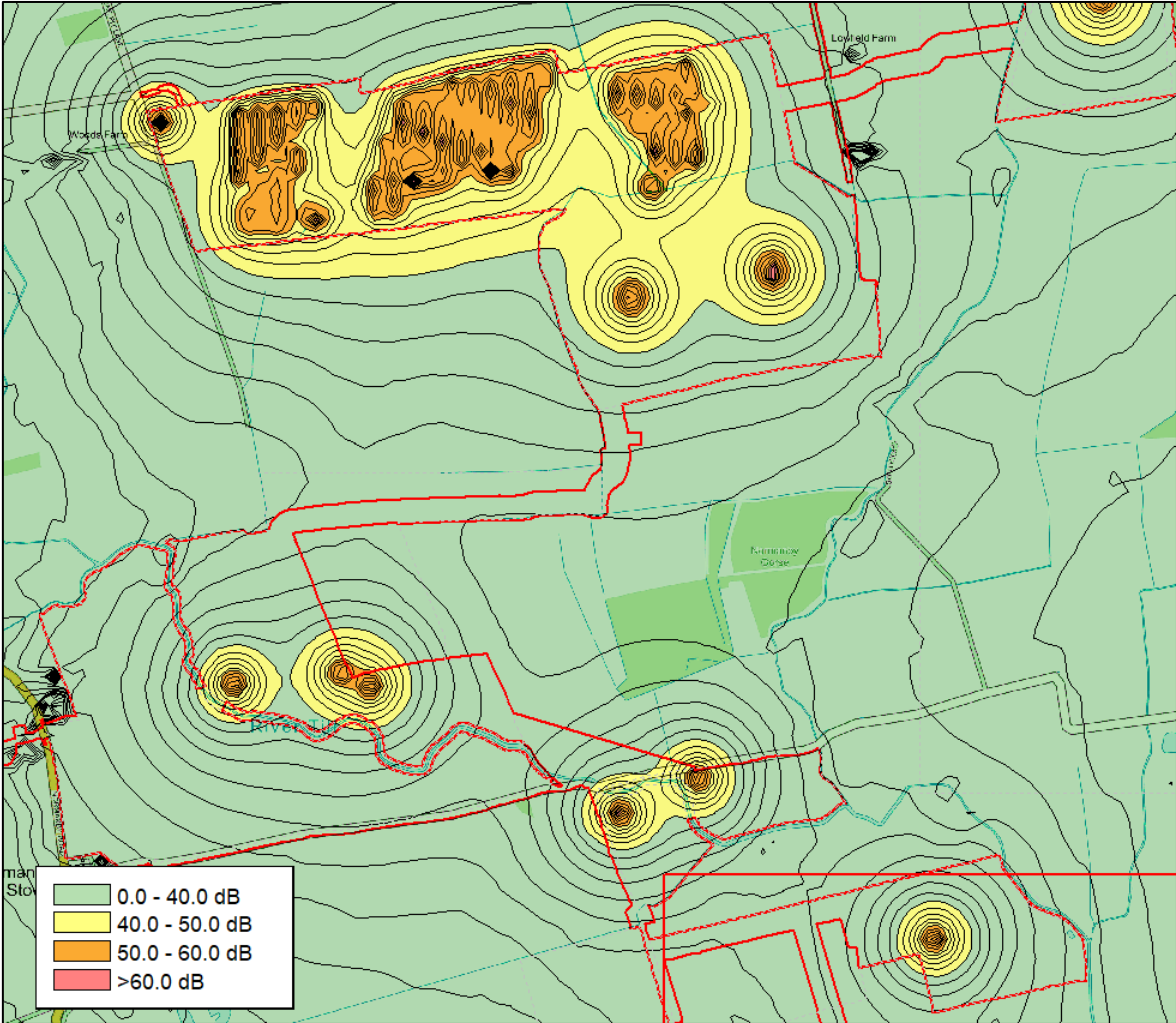
The assessment shown in the tables above indicates that internal L_{Aeq} noise levels from all potential noise sources, during both the daytime and night-time periods are predicted to be below the WHO noise intrusion guidance at all sensitive receptors. As set out in Table 15.9 of the ES, this is an indication of a negligible effect and therefore a moderate/minor significance.

Figure 15.3.1 Cottam 1 Noise Contour Plot (North)



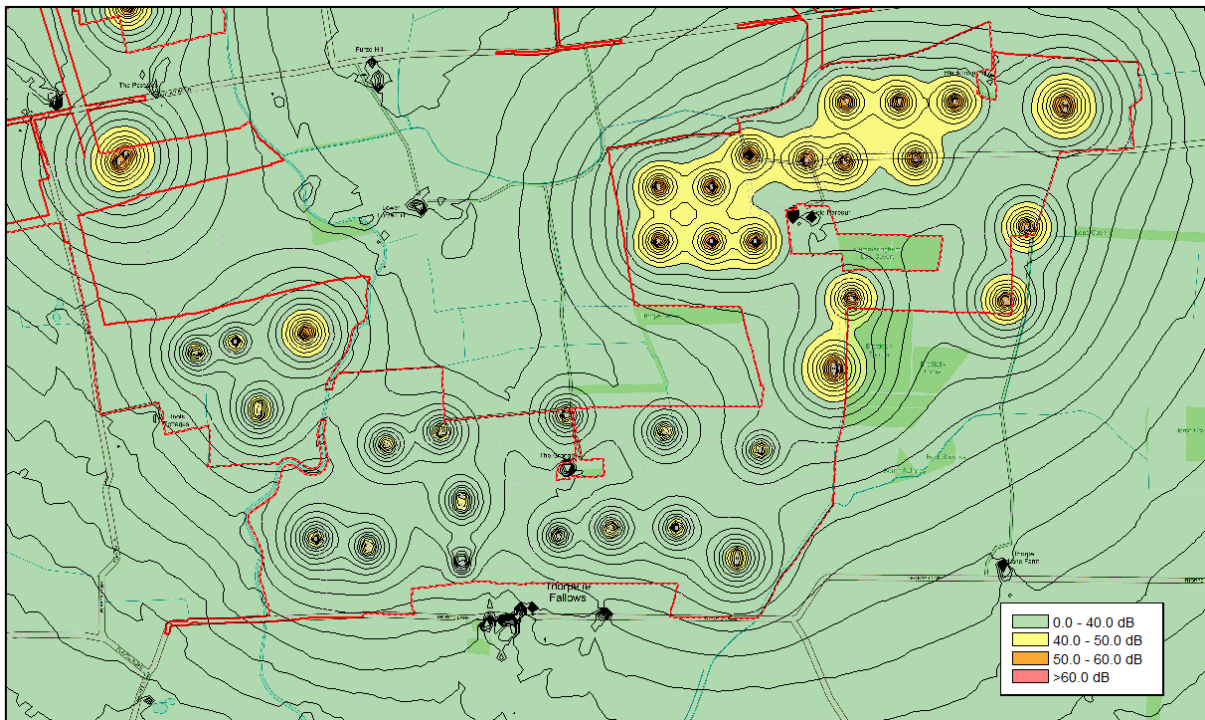
Not to scale
OS Licence No. AL553611

Figure 15.3.2 Cottam 1 Noise Contour Plot (West)



Not to scale
OS Licence No. AL553611

Figure 15.3.3 Cottam 1 Noise Contour Plot (South)



Not to scale
OS Licence No. AL553611

Combined Noise Level Assessment (Change In Noise Levels) – Cottam 1

This assessment compares the noise from the existing ambient noise climate (based on existing measured L_{Aeq}), with the predicted noise level from the proposed scenario from all noise sources associated with the Scheme. The difference between the ‘existing’ ambient noise level and the predicted ‘worst-case proposed’ noise level is presented in the tables below.

Table 15.3.17 Difference between Baseline and Proposed Scenarios (Daytime) – Cottam 1

Location	Measured Baseline $L_{Aeq,15mins}$	Measured Baseline Combined with Contribution from the Proposed Scenario	Contribution from Solar Scheme $L_{Aeq,16\ hour}$
R01	49.7	49.7	0.0
R02	49.7	49.7	0.0
R03	45.0	45.1	0.1
R04	45.0	45.1	0.1
R05	45.0	45.1	0.1
R06	45.0	45.0	0.0
R07	49.0	49.0	0.0
R08	49.7	49.7	0.0
R09	49.7	49.9	0.2
R10	49.7	49.8	0.1
R11	49.7	49.7	0.0
R12	40.3	40.4	0.1
R13	40.3	40.3	0.0
R14	40.3	40.4	0.1

Location	Measured Baseline $L_{Aeq,15mins}$	Measured Baseline Combined with Contribution from the Proposed Scenario	Contribution from Solar Scheme $L_{Aeq 16 hour}$
R15	49.7	49.7	0.0
R16	49.7	49.7	0.0
R17	49.7	49.7	0.0
R18	49.7	49.7	0.0
R19	49.7	49.7	0.0
R20	49.7	49.7	0.0
R21	49.7	49.7	0.0
R22	49.7	49.7	0.0
R23	49.7	49.7	0.0
R24	49.7	49.7	0.0
R25	49.7	49.7	0.0
R26	49.7	49.7	0.0
R27	49.7	49.7	0.0
R28	49.7	49.7	0.0
R29	49.7	49.7	0.0
R30	49.7	49.8	0.1
R31	49.7	49.7	0.0
R32	49.7	49.7	0.0
R33	49.7	49.7	0.0
R34	49.7	49.7	0.0
R35	49.0	49.0	0.0
R36	49.0	49.0	0.0
R37	40.3	40.5	0.2
R38	49.7	49.9	0.2
R39	49.7	49.8	0.1
R40	49.7	49.7	0.0
R41	49.7	49.7	0.0
R42	49.7	49.7	0.0
R43	49.0	49.0	0.0
R44	49.0	49.0	0.0
R45	45.0	45.1	0.1
R46	45.0	45.1	0.1
R47	45.0	45.1	0.1
R48	45.0	45.7	0.7
R49	45.0	45.0	0.0
R50	45.0	45.0	0.0
R51	45.0	45.0	0.0
R52	40.3	40.4	0.1
R53	40.3	41.0	0.7
R54	40.3	40.5	0.2
R55	40.3	40.4	0.1
R56	40.3	40.3	0.0
R57	40.3	40.7	0.4
R58	40.3	40.3	0.0
R59	40.3	41.8	1.5

Location	Measured Baseline $L_{Aeq,15mins}$	Measured Baseline Combined with Contribution from the Proposed Scenario	Contribution from Solar Scheme $L_{Aeq 16 hour}$
R60	40.3	41.9	1.6
R61	40.3	41.6	1.3
R62	40.3	40.4	0.1
R63	40.3	40.3	0.0
R64	40.3	40.4	0.1
R65	49.7	49.7	0.0
R66	49.7	49.7	0.0

Table 15.3.18 Difference between Baseline and Proposed Scenarios (Night-time) – Cottam 1

Location	Measured Baseline $L_{Aeq,15mins}$	Measured Baseline Combined with Contribution from the Proposed Scenario	Contribution from Solar scheme $L_{Aeq 16 hour}$
R01	37.4	38.2	0.8
R02	37.4	37.9	0.5
R03	31.8	33.3	1.5
R04	31.8	34.0	2.2
R05	31.8	33.9	2.1
R06	31.8	33.1	1.3
R07	34.7	35.1	0.4
R08	37.4	37.8	0.4
R09	37.4	39.8	2.4
R10	37.4	39.4	2.0
R11	37.4	37.7	0.3
R12	31.4	32.1	0.7
R13	31.4	31.8	0.4
R14	31.4	32.3	0.9
R15	37.4	37.9	0.5
R16	37.4	38.0	0.6
R17	37.4	38.1	0.7
R18	37.4	37.9	0.5
R19	37.4	40.3	2.9
R20	37.4	37.4	0.0
R21	37.4	37.5	0.1
R22	37.4	37.5	0.1
R23	37.4	37.5	0.1
R24	37.4	38.6	1.2
R25	37.4	37.7	0.3
R26	37.4	37.6	0.2
R27	37.4	37.4	0.0
R28	37.4	38.1	0.7
R29	37.4	37.4	0.0
R30	37.4	39.9	2.5
R31	37.4	40.2	2.8
R32	37.4	39.7	2.3
R33	37.4	37.5	0.1
R34	37.4	37.5	0.1

R35	34.7	35.1	0.4
R36	34.7	34.8	0.1
R37	31.4	31.5	0.1
R38	37.4	37.6	0.2
R39	37.4	38.7	1.3
R40	37.4	38.5	1.1
R41	37.4	37.5	0.1
R42	37.4	37.9	0.5
R43	34.7	35.4	0.7
R44	34.7	34.7	0.0
R45	31.8	31.8	0.0
R46	31.8	32.7	0.9
R47	31.8	34.7	2.9
R48	31.8	33.8	2.0
R49	31.8	34.8	3.0
R50	31.8	32.1	0.3
R51	31.8	34.3	2.5
R52	31.4	31.6	0.2
R53	31.4	31.5	0.1
R54	31.4	32.6	1.2
R55	31.4	33.6	2.2
R56	31.4	32.0	0.6
R57	31.4	31.9	0.5
R58	31.4	31.8	0.4
R59	31.4	32.9	1.5
R60	31.4	31.7	0.3
R61	31.4	32.0	0.6
R62	31.4	32.2	0.8
R63	31.4	32.0	0.6
R64	31.4	31.6	0.2
R65	37.4	37.6	0.2
R66	37.4	37.7	0.3

The results presented in the table above show the change in noise levels between the existing measured L_{Aeq} noise levels and the contribution from the Scheme. When the differences between the 'existing' and 'proposed' scenario are compared with the noise change criteria given in Table 15.10 of Chapter 15, the contribution from the Scheme is considered a **negligible** effect and therefore a **moderate/minor** significance.

15.3.5.2 Cottam 2
BS 4142 Assessment – Cottam 2
Table 15.3.19 BS 4142 Proposed Operational Noise Assessment – Cottam 2

Location	Existing Measured Background L_{A90}		Rating level from plant ($L_{A,Tr}$)		BS 4142 Score	
	Daytime	Night-time	Daytime	Night-time	Daytime	Night-time
R01	30	22	33	34	3	12
R02	30	22	35	36	5	14
R03	30	22	30	32	0	10
R04	30	22	34	35	4	13
R05	31	22	24	26	-7	4
R06	31	22	26	26	-5	4
R07	31	22	26	27	-5	5
R08	31	22	23	25	-8	3
R09	30	22	29	30	-1	8
R10	30	22	20	21	-10	-2
R11	30	22	17	19	-13	-3

The assessment above shows that noise levels from the solar farm are predicted to be up to +5 dB above the existing background noise levels at the closest sensitive receptors during the daytime and up to +14 dB during the night-time, which, as set out in Table 15.8 of the ES, is an indication of a **major** effect and therefore **major** significance.

Noise Intrusion Assessment – Cottam 2

Internal noise levels, at nearby sensitive receptors from all sources of potential noise associated with the Scheme have been assessed both with windows open, where a reduction from a partially open window of 10 dB has been used, and with windows closed where an assumption of single glazing with a sound reduction of 30 dB has been used.

Table 15.3.20 Daytime Noise Intrusion Levels L_{Aeq} 1 hour – Cottam 2

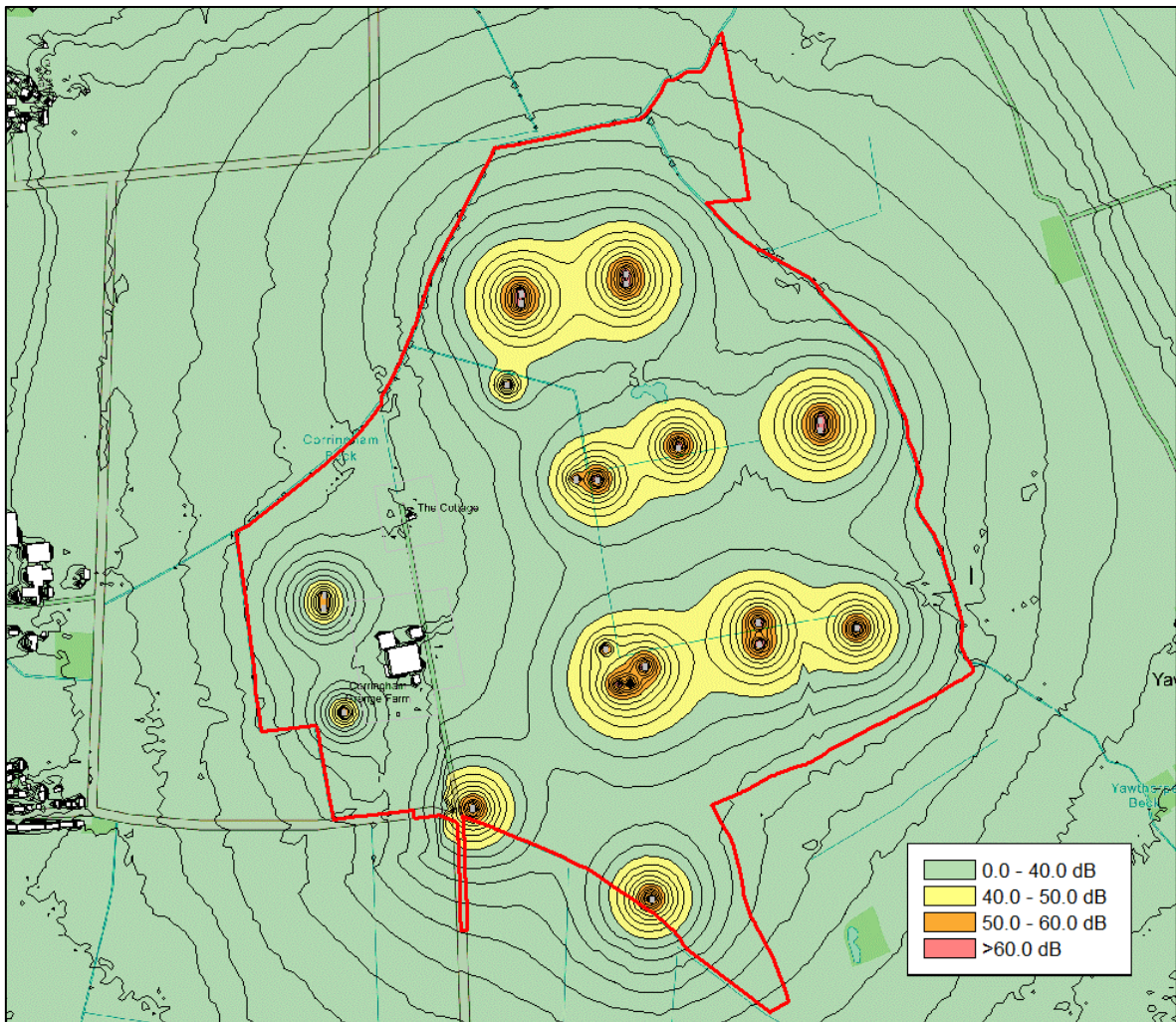
Location	External L_{Aeq} Noise Level at 1 metre from façade	Internal L_{Aeq} with windows-open	Internal L_{Aeq} with windows-closed	Criteria L_{Aeq}
R01	30.5	20.5	0.5	35
R02	33.0	23.0	3.0	35
R03	28.4	18.4	0.0	35
R04	31.5	21.5	1.5	35
R05	21.7	11.7	0.0	35
R06	23.7	13.7	0.0	35
R07	24.1	14.1	0.0	35
R08	21.0	11.0	0.0	35
R09	26.7	16.7	0.0	35
R10	17.9	7.9	0.0	35
R11	15.3	5.3	0.0	35

Table 15.3.21 Night-time Noise Intrusion Levels L_{Aeq} 15mins – Cottam 2

Location	External L_{Aeq} Noise Level at 1 metre from façade	Internal L_{Aeq} with windows-open	Internal L_{Aeq} with windows-closed	Criteria L_{Aeq}
R01	32.4	22.4	2.4	30
R02	34.3	24.3	4.3	30
R03	29.7	19.7	0.0	30
R04	33.0	23.0	3.0	30
R05	23.5	13.5	0.0	30
R06	24.0	14.0	0.0	30
R07	24.7	14.7	0.0	30
R08	23.2	13.2	0.0	30
R09	27.5	17.5	0.0	30
R10	18.5	8.5	0.0	30
R11	17.0	7.0	0.0	30

The assessment shown in the tables above indicates that internal L_{Aeq} noise levels from all potential noise sources, during both the daytime and night-time periods are predicted to be below the WHO noise intrusion guidance at all sensitive receptors. As set out in Table 15.9 of the ES this is an indication of a negligible effect and therefore a moderate/minor significance.

Figure 15.3.4 Cottam 2 Noise Contour Plot



Not to scale
OS Licence No. AL553611

Combined Noise Level Assessment (Change In Noise Levels) – Cottam 2

This assessment compares the noise from the existing ambient noise climate (based on existing measured L_{Aeq}), with the predicted noise level from the proposed scenario from all noise sources associated with the Scheme. The difference between the ‘existing’ ambient noise level and the predicted ‘worst-case proposed’ noise level is presented in the tables below.

Table 15.3.22 Difference between Baseline and Proposed Scenarios (Daytime) – Cottam 2

Location	Measured Baseline $L_{Aeq,15mins}$	Measured Baseline Combined with Contribution from the Proposed Scenario	Contribution from Solar Scheme $L_{Aeq,16 hour}$
R01	46.1	46.2	0.1
R02	46.1	46.3	0.2
R03	46.1	46.2	0.1
R04	46.1	46.2	0.1
R05	48.9	48.9	0.0
R06	48.9	48.9	0.0

Location	Measured Baseline $L_{Aeq,15mins}$	Measured Baseline Combined with Contribution from the Proposed Scenario	Contribution from Solar Scheme $L_{Aeq 16 hour}$
R07	48.9	48.9	0.0
R08	48.9	48.9	0.0
R09	46.1	46.1	0.0
R10	46.1	46.1	0.0
R11	46.1	46.1	0.0

Table 15.3.23 Difference between Baseline and Proposed Scenarios (Night-time) – Cottam 2

Location	Measured Baseline $L_{Aeq,15mins}$	Measured Baseline Combined with Contribution from the Proposed Scenario	Contribution from Solar Scheme $L_{Aeq 16 hour}$
R01	34.5	36.6	2.1
R02	34.5	37.4	2.9
R03	34.5	35.7	1.2
R04	34.5	36.8	2.3
R05	38.7	38.8	0.1
R06	38.7	38.8	0.1
R07	38.7	38.9	0.2
R08	38.7	38.8	0.1
R09	34.5	35.3	0.8
R10	34.5	34.6	0.1
R11	34.5	34.6	0.1

The results presented in the table above show the change in noise levels between the existing measured L_{Aeq} noise levels and the contribution from the Scheme. When the differences between the 'existing' and 'proposed' scenario are compared with the noise change criteria given in Table 15.10 of Chapter 15, the contribution from the Scheme is considered a **negligible** effect and therefore a **moderate/minor** significance.

15.3.5.3 Cottam 3a

BS 4142 Assessment – Cottam 3a

Table 15.3.24 BS 4142 Proposed Operational Noise Assessment – Cottam 3a

Location	Existing Measured Background L_{A90}		Rating level from plant ($L_{A,Tr}$)		BS 4142 Score	
	Daytime	Night-time	Daytime	Night-time	Daytime	Night-time
R01	38	21	30	34	-8	13
R02	38	21	36	38	-2	17
R03	38	21	29	32	-9	11
R04	38	21	34	35	-4	14
R05	29	19	23	25	-6	6
R06	29	19	22	23	-7	4
R07	29	19	24	26	-5	7
R08	30	24	25	27	-5	3
R09	30	24	21	24	-9	0

Location	Existing Measured Background		Rating level		BS 4142	
	L _{A90}		from plant (L _{A,Tr})		Score	
	Daytime	Night-time	Daytime	Night-time	Daytime	Night-time
*R10	32	19	27	28	-5	9
*R11	32	19	33	35	1	16
*R12	32	19	27	29	-5	10
R13	38	21	26	27	-12	6
R14	38	21	29	29	-9	8
R15	38	21	26	27	-12	6

* Existing background noise levels take from LT2 Cottam 3b

The assessment above shows that noise levels from the solar farm are predicted to be up to +1 dB above the existing background noise levels at the closest sensitive receptors during the daytime and up to +17 dB above the existing background noise levels during the night-time which, as set out in to Table 15.9 of the ES, is an indication of a **major** effect and therefore **major** significance.

Noise Intrusion Assessment – Cottam 3a

Internal noise levels, at nearby sensitive receptors from all sources of potential noise associated with the Scheme have been assessed both with windows open, where a reduction from a partially open window of 10 dB has been used, and with windows closed where an assumption of single glazing with a sound reduction of 30 dB has been used.

Table 15.3.25 Daytime Noise Intrusion Levels L_{Aeq} 1 hour – Cottam 3a

Location	External L _{Aeq} Noise Level at 1 metre from façade	Internal L _{Aeq} with windows-open	Internal L _{Aeq} with windows-closed	Criteria L _{Aeq}
R01	28.4	18.4	0.0	35
R02	34.0	24.0	4.0	35
R03	26.8	16.8	0.0	35
R04	31.7	21.7	1.7	35
R05	21.0	11.0	0.0	35
R06	20.0	10.0	0.0	35
R07	22.4	12.4	0.0	35
R08	23.1	13.1	0.0	35
R09	19.0	9.0	0.0	35
R10	24.6	14.6	0.0	35
R11	30.9	20.9	0.9	35
R12	25.1	15.1	0.0	35
R13	24.3	14.3	0.0	35
R14	26.9	16.9	0.0	35
R15	24.3	14.3	0.0	35

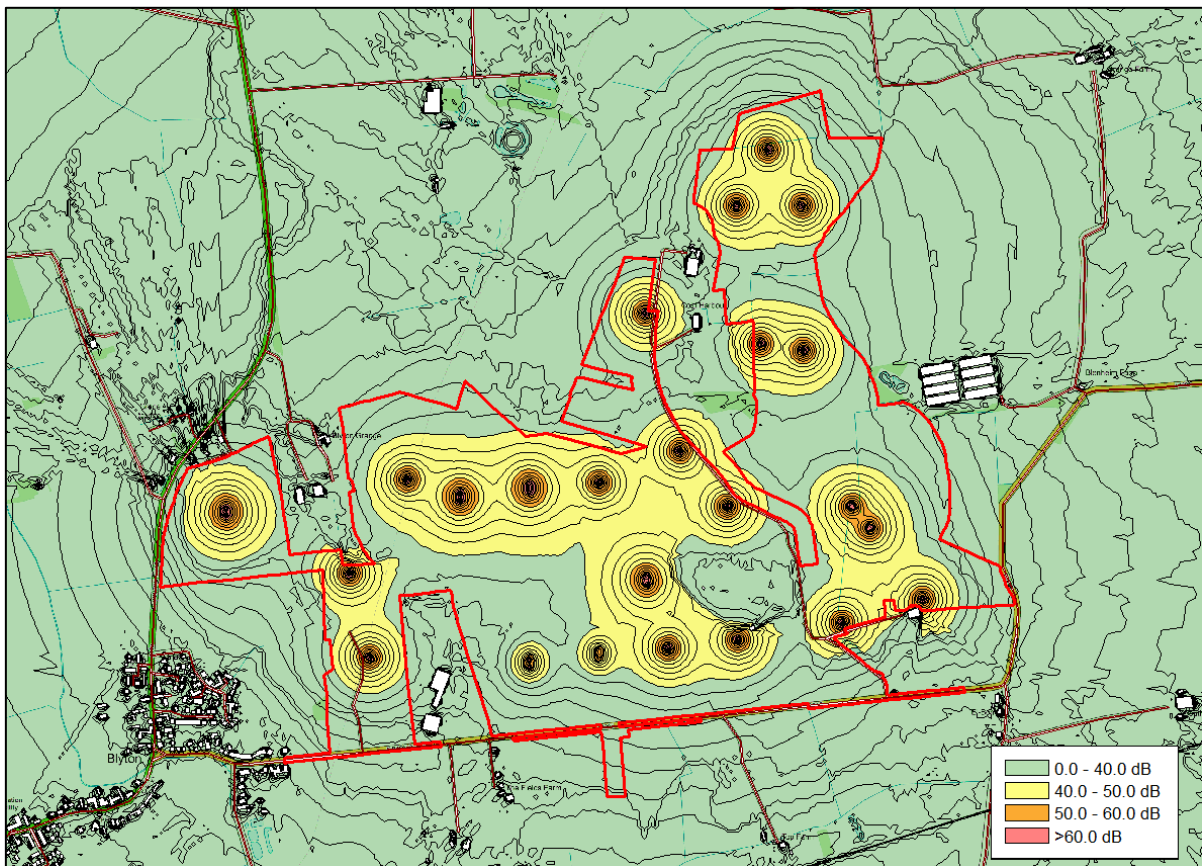
Table 15.3.26 Night-time Noise Intrusion Levels L_{Aeq} 15mins – Cottam 3a

Location	External L _{Aeq} Noise Level at 1 metre from façade	Internal L _{Aeq} with windows-open	Internal L _{Aeq} with windows-closed	Criteria L _{Aeq}
R01	32.2	22.2	2.2	30

Location	External L_{Aeq} Noise Level at 1 metre from façade	Internal L_{Aeq} with windows-open	Internal L_{Aeq} with windows-closed	Criteria L_{Aeq}
R02	36.2	26.2	6.2	30
R03	30.3	20.3	0.3	30
R04	33.0	23.0	3.0	30
R05	23.1	13.1	0.0	30
R06	21.2	11.2	0.0	30
R07	24.3	14.3	0.0	30
R08	24.8	14.8	0.0	30
R09	21.6	11.6	0.0	30
R10	25.9	15.9	0.0	30
R11	32.6	22.6	2.6	30
R12	26.5	16.5	0.0	30
R13	25.1	15.1	0.0	30
R14	27.0	17.0	0.0	30
R15	25.2	15.2	0.0	30

The assessment shown in the tables above indicates that internal L_{Aeq} noise levels from all potential noise sources, during both the daytime and night-time periods are predicted to be below the WHO noise intrusion guidance at all sensitive receptors. As set out in to Table 15.9 of the ES this is an indication of a **negligible effect** and therefore a **moderate/minor** significance.

Figure 15.3.5 Cottam 3a Noise Contour Plot



Not to scale
OS Licence No. AL553611

Combined Noise Level Assessment (Change In Noise Levels) – Cottam 3a

This assessment compares the noise from the existing ambient noise climate (based on existing measured L_{Aeq}), with the predicted noise level from the proposed scenario from all noise sources associated with the Scheme. The difference between the ‘existing’ ambient noise level and the predicted ‘worst-case proposed’ noise level is presented in the tables below.

Table 15.3.27 Difference between Baseline and Proposed Scenarios (Daytime) – Cottam 3a

Location	Measured Baseline $L_{Aeq,15mins}$	Measured Baseline Combined with Contribution from the Proposed Scenario	Contribution from Solar Scheme $L_{Aeq 16 hour}$
R01	61.5	61.5	0.0
R02	61.5	61.5	0.0
R03	61.5	61.5	0.0
R04	61.5	61.5	0.0
R05	47.8	47.8	0.0
R06	47.8	47.8	0.0
R07	47.8	47.8	0.0
R08	55.7	55.7	0.0
R09	55.7	55.7	0.0
*R10	56.5	56.5	0.0
*R11	56.5	56.5	0.0
*R12	56.5	56.5	0.0
R13	61.5	61.5	0.0
R14	61.5	61.5	0.0
R15	61.5	61.5	0.0

* Existing baseline noise levels take from LT2 Cottam 3b

Table 15.3.28 Difference between Baseline and Proposed Scenarios (Night-time) – Cottam 3a

Location	Measured Baseline $L_{Aeq,15mins}$	Measured Baseline Combined with Contribution from the Proposed Scenario	Contribution from Solar Scheme $L_{Aeq 16 hour}$
R01	52.7	52.7	0.0
R02	52.7	52.8	0.1
R03	52.7	52.7	0.0
R04	52.7	52.7	0.0
R05	29.4	30.3	0.9
R06	29.4	30.0	0.6
R07	29.4	30.6	1.2
R08	44.7	44.7	0.0
R09	44.7	44.7	0.0
*R10	32.9	33.7	0.8
*R11	32.9	35.8	2.9
*R12	32.9	33.8	0.9
R13	52.7	52.7	0.0
R14	52.7	52.7	0.0
R15	52.7	52.7	0.0

* Existing baseline noise levels take from LT2 Cottam 3b

The results presented in the table above show the change in noise levels between the existing measured L_{Aeq} noise levels and the contribution from the Scheme. When the differences between the 'existing' and 'proposed' scenario are compared with the noise change criteria given in Table 15.10 of Chapter 15, the contribution from the Scheme is considered a **negligible** effect and therefore a **moderate/minor** significance.

15.3.5.4 Cottam 3b

BS 4142 Assessment – Cottam 3b

Table 15.3.29 BS 4142 Proposed Operational Noise Assessment – Cottam 3b

Location	Existing Measured Background L_{A90}		Rating level from plant ($L_{A,T}$)		BS 4142 Score	
	Daytime	Night-time	Daytime	Night-time	Daytime	Night-time
R01	34	20	23	25	-11	5
R02	34	20	19	22	-15	2
R03	34	20	25	26	-9	6
R04	32	19	26	27	-7	8
R05	32	19	18	21	-14	2
R06	32	19	29	31	-3	12
R07	32	19	22	23	-10	4
R08	32	19	26	28	-6	9
R09	34	20	25	26	-9	6
R10	34	20	22	23	-12	3
R11	34	20	22	23	-12	3
*R12	38	21	8	10	-30	-11
R13	34	20	26	26	-8	6
R14	34	20	19	23	-15	3

* Existing background noise levels take from LT1 Cottam 3a

The assessment above shows that noise levels from the solar farm are predicted to be below the existing background noise levels at the closest sensitive receptors during the daytime and up to +12 dB above the existing background noise levels during the night-time which, as set out in Table 15.8 of the ES, is an indication of a **major** effect and therefore **major** significance.

Noise Intrusion Assessment – Cottam 3b

Internal noise levels, at nearby sensitive receptors from all sources of potential noise associated with the Scheme have been assessed both with windows open, where a reduction from a partially open window of 10 dB has been used, and with windows closed where an assumption of single glazing with a sound reduction of 30 dB has been used.

Table 15.3.22 Daytime Noise Intrusion Levels L_{Aeq} 1 hour – Cottam 3b

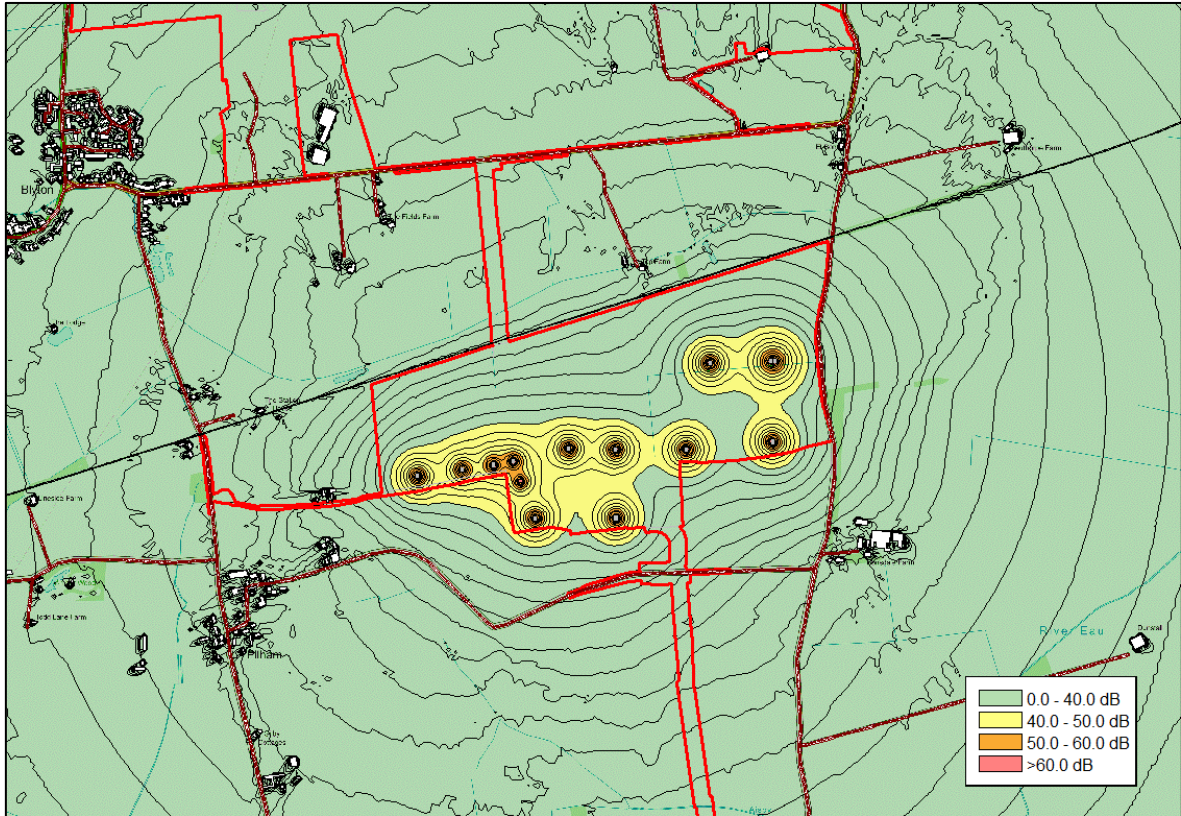
Location	External L _{Aeq} Noise Level at 1 metre from façade	Internal L _{Aeq} with windows-open	Internal L _{Aeq} with windows-closed	Criteria L _{Aeq}
R01	21.1	11.1	0.0	35
R02	16.9	6.9	0.0	35
R03	23.4	13.4	0.0	35
R04	23.5	13.5	0.0	35
R05	16.2	6.2	0.0	35
R06	27.0	17.0	0.0	35
R07	20.4	10.4	0.0	35
R08	24.0	14.0	0.0	35
R09	23.4	13.4	0.0	35
R10	20.2	10.2	0.0	35
R11	20.0	10.0	0.0	35
R12	5.8	0.0	0.0	35
R13	24.1	14.1	0.0	35
R14	16.9	6.9	0.0	35

Table 15.3.30 Night-time Noise Intrusion Levels L_{Aeq} 15mins – Cottam 3b

Location	External L _{Aeq} Noise Level at 1 metre from façade	Internal L _{Aeq} with windows-open	Internal L _{Aeq} with windows-closed	Criteria L _{Aeq}
R01	23.2	13.2	0.0	30
R02	19.8	9.8	0.0	30
R03	24.1	14.1	0.0	30
R04	25.0	15.0	0.0	30
R05	18.8	8.8	0.0	30
R06	28.9	18.9	0.0	30
R07	21.3	11.3	0.0	30
R08	25.9	15.9	0.0	30
R09	24.1	14.1	0.0	30
R10	20.9	10.9	0.0	30
R11	21.0	11.0	0.0	30
R12	7.7	0.0	0.0	30
R13	24.2	14.2	0.0	30
R14	20.7	10.7	0.0	30

The assessment shown in the tables above indicates that internal L_{Aeq} noise levels from all potential noise sources, during both the daytime and night-time periods are predicted to be below the WHO noise intrusion guidance at all sensitive receptors. As set out in to Table 15.9 of the ES, this is an indication of a **negligible effect** and therefore a **moderate/minor** significance.

Figure 15.3.6 Cottam 3b Noise Contour Plot



Not to scale
OS Licence No. AL553611

Combined Noise Level Assessment (Change In Noise Levels) – Cottam 3b

This assessment compares the noise from the existing ambient noise climate (based on existing measured L_{Aeq}), with the predicted noise level from the proposed scenario from all noise sources associated with the Scheme. The difference between the ‘existing’ ambient noise level and the predicted ‘worst-case proposed’ noise level is presented in the tables below.

Table 15.3.31 Difference between Baseline and Proposed Scenarios (Daytime) – Cottam 3b

Location	Measured Baseline $L_{Aeq,15mins}$	Measured Baseline Combined with Contribution from the Proposed Scenario	Contribution from Solar Scheme L_{Aeq} 16 hour
R01	54.7	54.7	0.0
R02	54.7	54.7	0.0
R03	54.7	54.7	0.0
R04	56.5	56.5	0.0
R05	56.5	56.5	0.0
R06	56.5	56.5	0.0
R07	56.5	56.5	0.0
R08	56.5	56.5	0.0
R09	54.7	54.7	0.0
R10	54.7	54.7	0.0
R11	54.7	54.7	0.0
R12	61.5	61.5	0.0
R13	54.7	54.7	0.0
R14	54.7	54.7	0.0

* Existing baseline noise levels take from LT1 Cottam 3a

Table 15.3.32 Difference between Baseline and Proposed Scenarios (Night-time) – Cottam 3b

Location	Measured Baseline $L_{Aeq,15mins}$	Measured Baseline Combined with Contribution from the Proposed Scenario	Contribution from Solar Scheme L_{Aeq} 16 hour
R01	34.5	34.8	0.3
R02	34.5	34.6	0.1
R03	34.5	34.9	0.4
R04	32.9	33.6	0.7
R05	32.9	33.1	0.2
R06	32.9	34.4	1.5
R07	32.9	33.2	0.3
R08	32.9	33.7	0.8
R09	34.5	34.9	0.4
R10	34.5	34.7	0.2
R11	34.5	34.7	0.2
R12	52.7	52.7	0.0
R13	34.5	34.9	0.4
R14	34.5	34.7	0.2

* Existing baseline noise levels take from LT1 Cottam 3a

The results presented in the table above show the change in noise levels between the existing measured L_{Aeq} noise levels and the contribution from the Scheme. When the differences between the

'existing' and 'proposed' scenario are compared with the noise change criteria given in Table 15.10 of Chapter 15, the contribution from the Scheme is considered a **negligible** effect and therefore a **moderate/minor** significance.