East Anglia
Offshore Wind

VATTENFALL

SCOTTISHPOWER RENEWABLES

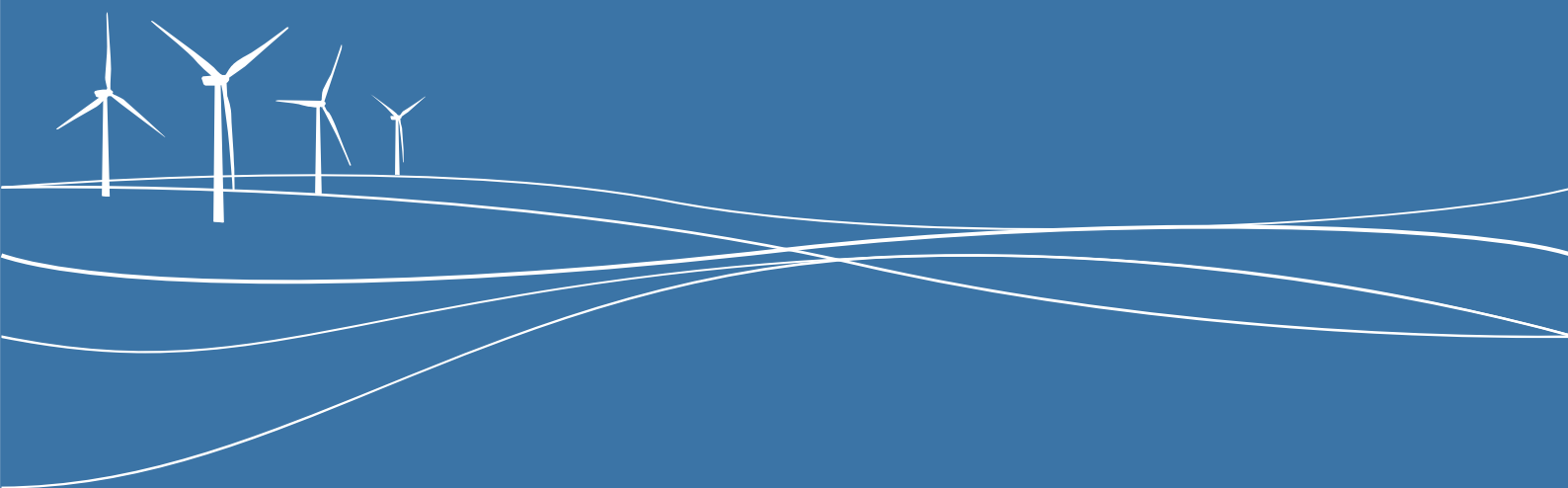
East Anglia THREE

# Appendix 26.1

## Baseline noise survey and supporting information

**Environmental Statement**
Volume 3
Document Reference – 6.3.26

Author – Royal HaskoningDHV
East Anglia THREE Limited
Date – November 2015
Revision History – Revision A



**This Page is Intentionally Blank**

## Table of Contents

# 26.1 BASELINE NOISE SURVEY AND SUPPORTING INFORMATION

## 26.1.1 Noise Survey

1. Attended measurements were conducted at three residential receptors surrounding the Converter Station during the day of the 29th September 2011 and early morning on the 30th September 2011. The closest residential receptors identified are isolated houses separated from the site by agricultural land. The three receptors chosen for noise monitoring, and agreed with the local Environmental Health Department, (the nearest three properties) were:

    - MP1 – Bullenhall Farm;
    - MP2 – Hill Farm House; and
    - MP3 – Burstall Hall.

2. Further measurements were taken on 29th to the 31st May 2012 at locations representing residential receptors nearest to HDD and Construction Consolidation Sites along the onshore cable route:

    - R1 – Premier Inn, Claydon;
    - R2 - Top Street, Martlesham;
    - R3 - Broom Hill Park, Woodbridge;
    - R4 - Church Carpark, Church Lane, Martlesham;
    - R5 - Crossing at Red House Farm, Falkenham;
    - R6 - Village hall carpark, Little Bealings;
    - R7 - Pine Lodge (south of golfcourse), Westerfield Road;
    - R8 - Sycamore House, Somerham Road;
    - R10 - Bramford Road
    - R11 - Kirton Lodge / Sluice Farm, Kirton;
    - R12 - Ferry Lane, close to MOD site; and
    - R13 - North of Newbourne (rear of golfcourse).

3. R9 is represented by location MP1 at Bullenhall for the purposes of assessing the Converter Station and therefore was not measured during this second site visit.

4. Measurements were undertaken at a height of 1.5m and in free-field conditions i.e. >3.5m from a reflective surface using a Norsonic 118 type 1 sound level meter ('SLM') (serial no. 31677) with pre-amplifier and microphone protected by foam windshield and a Norsonic type 1251 acoustic calibrator (serial no. 32194).

5. The calibration of the sound level meters was checked before and after the measurements using the acoustic calibrator, with no drift being observed. The SLMs conform to BS EN 61672-1:2003 Electroacoustics - Sound level meters, and the calibrator conforms to BS EN 60942:2003 Electroacoustics - Sound calibrators. The equipment used has a calibration history that is traceable to a certified calibration institution.

6. During the measurements near to the Converter Station Compound, weather conditions were noted to be hot, dry and clear, with a slight breeze of approximately 1m/s. The temperature was approximately 28-30°C. At night, the temperature cooled to 13-14°C with small mist patches in the area. During the measurements from locations near to the onshore cable route, weather conditions were noted to be dry, clear and calm throughout.

7. The weather during all survey dates was considered suitable for noise measurements.

## 26.1.2 Environmental Baseline

### 26.1.2.1 Onshore Cable Route

8. The onshore cable route largely runs through rural areas. *Table 26.1.1* presents a description of the noise environment associated with each receptor location. Identification numbers are associated with HDD and CCS numbers above. Volume 2, *Figure 26.2* shows the onshore cable route with monitoring locations. Due to the geographical extent of the route, receptors are not individually specified for individual construction scenarios in the impact section of this chapter.

**Table 26.1.1. Onshore cable route noise measurement locations**

| Onshore Cable Route Noise Measurement Locations | | | |
|---|---|---|---|
| Location | Address | Daytime Notes | Night-time Notes |
| R1 | Premier Inn | Dominated by traffic noise on the A14, occasional train to the west, birds in the trees | Dominated by HGV noise on A14 |
| R2 | Top Street | Traffic on local road, birds, larger vehicles and sirens on A12 | Birds, aircraft and very distant engine noise from Martlesham creek |

| Onshore Cable Route Noise Measurement Locations | | | |
|---|---|---|---|
| Location | Address | Daytime Notes | Night-time Notes |
| R3 | Broomhill park | Birds and pedestrians, some boats on Martlesham Creek and occasional passing vehicles – early finish due to lawn mower, trainline operational but not observed during measurement | Engine or Generator on creek, distant vehicle noise from A12 |
| R4 | Church car park | Small amounts of local traffic, distant A12, train passing to north, birds and breeze in trees | Distant hum of traffic and water cannon in field (also distant) |
| R5 | Crossing At Red House Farm | Field close by being ploughed by loud farm machinery– no measurements taken (see R11 for representative location) | |
| R6 | Little Bealings, village hall carpark | Passing vehicles and birds in trees, occasional aircraft overhead | Very quiet, dripping of recent rain, high level aircraft |
| R7 | Pine Lodge, Westerfield Road, south of golfcourse | Vehicle noise on Westerfeld Road, some bird noise | |
| R8 | Sycamore House, Somersham Road | Distant A14, traffic on Somersham road, some bird noise | |
| R9 | Same location as measurement CS3 undertaken for converter station below. | | |
| R10 | Bramford Road | Traffic on Bramford Road, nearby animals at egg shop | Traffic on Bramford Road, A14, owls |
| R11 | Kirton Lodge / Sluice Farm (also used as R5) | Moved away from farm noise but some distant tractor activity audible. Little local traffic, A14 audible (HGV) to west. Ended early due to tractor in local field | |
| R12 | Ferry lane close to MOD site | Local traffic, birds and insects, stopped early due to increasing wind | Visited on two nights, high wind both times, assume similar to R13 as very quiet location far from A14/A12 |
| R13 | North of Newbourne, at rear of golf course | Birds, distant farm noise, no traffic, voices from golf course | Very distant generator, no audible road noise, sprinkler on golf course |

9. With the exception of receptors R7 and R8, the existing LAeq day noise levels at the measurement locations are below the 65dB(A) minimum limit for construction noise assessed in accordance with BS5228. The threshold level for construction noise is therefore 65dB(A) during the day, except at R7 (threshold level of 66dB(A)) and R8 (threshold level of 68dB(A)). The night-time levels are below the BS5228 night time minimum limit of 45dB(A) with the exception of R10. Therefore 45dB(A) is used for the threshold level for HDD noise during the night for all receptors, with the exception of R10, where the threshold level is 59dB(A).

#### 26.1.2.2 Converter Station Compound

10. The Converter Station Compound is situated in a quiet, rural area and as such there are few dominant noise sources. During daytime hours, increased traffic levels on the nearby A14 and A1071 make a significant contribution to the ambient and background noise levels. Peak noise levels are generally as a result of individual vehicles passing close to a receptor location, farm vehicles in the fields or noise from animals such as dogs or geese. Whilst it was possible to see the active National Grid Bramford substation from the monitoring positions, including vehicle movements from ongoing construction works, no on-site activity was audible during the measurement times.

11. At night, the existing Bramford substation is a noise feature in the area, although it is less so during the daytime. Other noise sources include high altitude aircraft, wind in the trees and birds.

12. *Figure 26.2* shows the Indicative Converter Station Buildings, with the receptors and monitoring locations highlighted. The following is a description of the receptors and monitoring locations chosen.

##### 26.1.2.2.1 Location MP1 - Bullenhall Farm, NGR TM102 466

13. The daytime monitoring was undertaken on the grassed area immediately to the front of Bullenhall Farm house. The existing substation was not audible at the location, which is in a hollow with no line of sight to the substation. The area was quiet with the dominant noise being from wind in the nearby trees. There was a very distant hum audible from traffic noise. Other noise events that occurred during the monitoring period included: geese (64dB(A)); residents talking; phone ringing; vehicle movements; and high level aircraft (41-45dB(A)).

14. Night-time monitoring was conducted on the access lane to the property at the entrance to the yard, approximately 70m from the façade of the property. This location was used at the request and advice of the resident due to the potential for disturbance to them, their dogs and the numerous geese that would create noise if woken. Noise levels at this location were representative of noise levels at the

property. During the monitoring period, the noise was dominated by the hum from the substation. A crackle noise from the nearby pylons was also audible and owls "hooted" at regular intervals. Patches of mist were noted on the fields around the monitoring position.

26.1.2.2.2 Location MP2 – Hill Farm House NGR: TM 090 465

15. The daytime monitoring was undertaken at the access point to a field adjacent to the dwelling. The noise levels in the area are dominated by a mixture of: traffic, audible on distant roads and passing the monitoring location; movement of trees; and aircraft. Although visible, no noise was audible from the substation, approximately 750m to the east of the monitoring location. Passing vehicles generated the highest noise levels.

16. Night-time monitoring was conducted in the same location as in the daytime. No traffic passed the monitoring location and only a hum from the substation was audible.

26.1.2.2.3 Location MP3 – Burstall Hall, NGR: TM 102 450

17. Receptor CS3 is on a public footpath at the southeast corner of Burstall Long Wood.

18. This is to the east of Burstall Hall, the desired receptor location, to which access was not available at the time of the survey as this is on private land.

19. The noise level at the location is dominated by the sound of distant traffic to the south. The wind in the trees was also a contributing factor. During the last ten minutes of the survey a crop duster began passing the site spraying fertiliser on a field. As such the survey was terminated early.

20. The night survey was conducted at a location on a nearby public road for security reasons. No traffic passed the monitoring location, however traffic on other nearby roads was noted to be the primary noise source in the area. The noise level at this night-time location is considered representative of that at the residence, and no noise from the existing substation was audible.

21. Measurement results are presented below.

22. The background noise levels around the converter station during the night are between 20 and 30dB(A), which would be considered 'very low' in accordance with BS4142.

23. The monitoring undertaken at three locations around the Converter Station Refined Area of Search, during both the day and the night, has encompassed a worst case scenario for the background noise level in the likely area of the converter station. As low background noise levels have been measured, further monitoring of noise levels

in the area are unlikely to determine a background noise level at any receptor that would change the noise limits recommended by this assessment.

**Appendix 26.1 Ends Here**