

Norfolk Vanguard Offshore Wind Farm Substation Access Clarification Technical Note

Highways England Agreement In Principle

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Photo: Kentish Flats Offshore Wind Farm



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Introduction

1. This Briefing Note (BN07) comprises a review of the '**A47 Substation Access Clarification Technical Note**' (SACTN), dated 12th March 2019, prepared by Royal Haskoning DHV (RHDHV) in respect of the access arrangements required to serve the existing and proposed substations adjacent to the A47 Trunk Road at Necton, to the west of Dereham.
2. The SACTN was produced in response to AECOM Briefing Notes BN04 and BN06, which provided responses to previous proposals contained in earlier documents, namely the Substation Access Technical Note (SATN) and the Substation Access Briefing Note (SABN).
3. Three access points to the substation works are proposed, A, B and D1. All of these would obtain access directly from the A47 and all require new or adjusted layouts to make them acceptable to Highways England.
4. The access points would be used for the following purposes:
 - Access A would provide access to the works required to extend the existing National Grid substation (National Grid Substation Extension, NGSE);
 - Access B would provide access to the proposed Norfolk Vanguard Onshore Project Substation, together with Mobilisation Area 1 (MA1a) serving the installation of electricity cables in the vicinity of the two substations;
 - Access D1 would provide access to the overhead line modification works to the west of the A47.
5. The locations of these access points are illustrated in **Figure 1** below.

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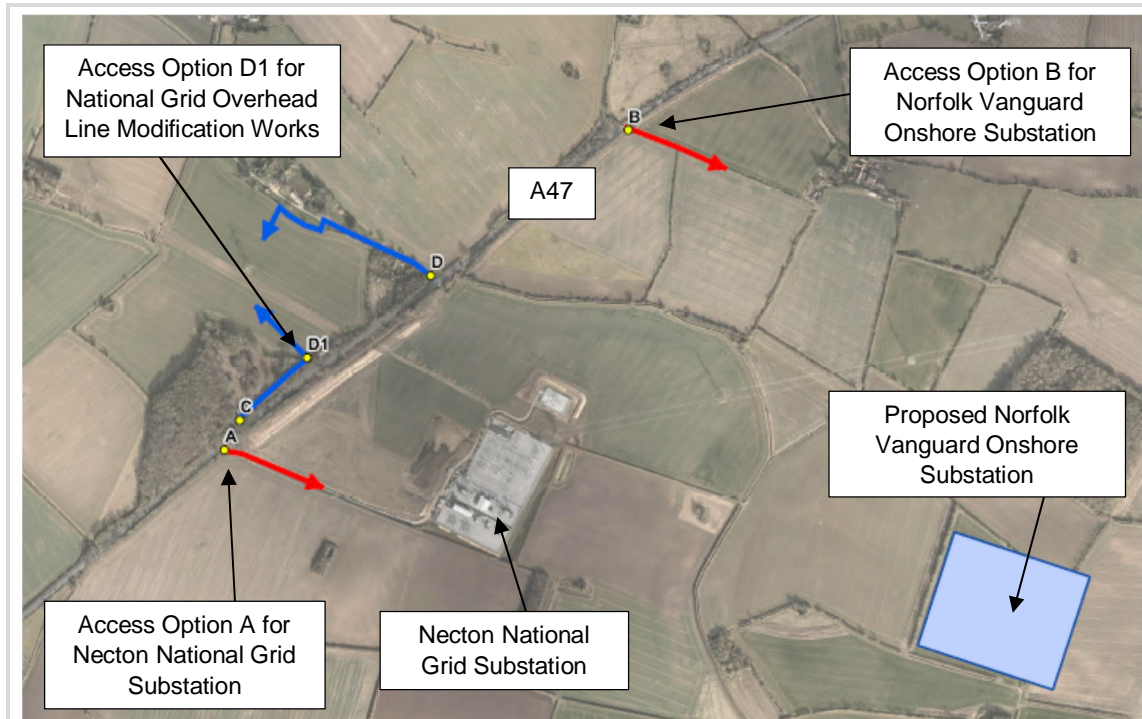


Figure 1. Location of Access A, B and D1 on the A47 at Necton

6. The issues previously raised by AECOM are set out in BN04 and BN06. These, together with the RHDHV response are summarised in Table 7.1 of the SACTN.
7. The SACTN contains the following material:
 - Updated layout plans for site accesses A, B and D1, including:
 - a general arrangement drawing (PB4476-008-006-005 rev 04);
 - swept path plots for the three access points ((PB4476-017, 018, 021, 022, 0233 & 023 rev F1.0).
 - Details of:
 - the traffic forecast to use each of these access points;
 - the duration over which this level of traffic is anticipated;
 - traffic management arrangements which will apply whilst they are in use; and
 - the flows anticipated to divert via the McDonalds roundabout at Swaffham and the Yaxham Road grade separated junction at Dereham because of the use of left-in, left-out only turning restrictions at access points A and D1.
8. Copies of Drawings PB4476-012, 014 & 015, rev F1.0, which provide a layout of each of the proposed site accesses annotated with DMRB geometric and visibility parameters, were not included in the SACTN and have been supplied separately.
9. AECOM's review of the layouts and the traffic flows reveals the following.

Access Arrangements to be provided

Item	Access A	Access B	Access D1
Drawing numbers	PB4476-DR012/F1.0 PB4476-DR017/F1.0 PB4476-DR018/F1.0	PB4476-DR014/F1.0 PB4476-DR021/F1.0 PB4476-DR022/F1.0	PB4476-DR015/F1.0 PB4476-DR023/F1.0 PB4476-DR024/F1.0
Junction type	Simple priority junction, to be limited to left-in, left-out operation	Ghost island priority junction	Simple priority junction, to be limited to left-in, left-out operation
Peak level of traffic use	100 light vehs/day; 68 HGV/ day; 50 light vehs/ peak hr; 7 HGV/ peak hr.	180 light vehs /day; 150 HGV/ day; 90 light vehs / peak hr; 16 HGV/ peak hr.	4 light vehs /day; 20 HGV/ day; 50 light vehs / peak hr; 7 HGV/ peak hr.
Duration of use	86 weeks in total, of which 16 weeks at the peak level of use	At least 100 weeks in total, of which 24 weeks at peak level of use	2 individual weeks of use, separated by a gap of 4-6 months
Design speed of main road adopted	100 km/hr	100 km/hr	60 km/hr (*)
Corner radii	15m	15m	15m
Exit tapers	25m @1:10	30m @ 1:6	25m @1:10
Visibility splays (assumes existing vegetation to be cleared/maintained as required) <u>NB evidence still to be submitted that these can be proven in the vertical plane</u>	4.5 x 215m	4.5 x 215m (L) 2.4 x 215m (R)	4.5 x 90m (*)
Swept path plots	These all show that HGVs can complete their turns without clipping kerb lines, and without encroaching on the wrong side of the A47		
	An HGV could enter the minor arm and stand clear of the A47 running lane whilst another HGV emerges from the minor arm	HGVs can enter and leave simultaneously without their swept paths conflicting.	An HGV could enter the minor arm and stand clear of the A47 running lane whilst another HGV emerges from the minor arm

(*) – to be operated under a temporary 30 mph speed limit

10. The layouts shown on these drawings appear to have taken on board all the issues raised in AECOM Briefing Notes 04 and 06 and, with one exception, appear to meet in full the design requirements of DMRB. The exception is that the visibility to the right out of access point B can only be achieved from a position 2.4m back from the give way line. DMRB design standard TD42 permits a relaxation to 4.5m in difficult circumstances for lightly trafficked simple junctions and to 2.4m in exceptionally difficult circumstances.
11. The SACTN contains a statement that *'Increasing the 'x' distance to 4.5m would require the removal of a large proportion of established hedgerows, vegetation and trees. This will have ecological impact and would remove much of the native mature screening required to mitigate the landscape impact'*. In the circumstances, this appears to be sufficient grounds to permit what is effectively a two-step permitted relaxation in the provision of emerging visibility at access point B.
12. In the case of access point D, where concern was expressed in BN06 about the ability of HGVs to enter and leave simultaneously, the SACTN proposes a traffic management scheme in which HGVs

arriving from the west will be held at a layby some two miles west of the site and will be called in when the site can confirm that no HGVs are about to leave the site.

13. On that basis, the layouts currently offered for access points A, B and D1 appear satisfactory, subject to:
- visibility splays being cleared of foliage;
 - visibility being proven in the vertical plane;
 - the implementation of the traffic management measures proposed; and
 - the carrying out of Stage 1 and 2 Road Safety Audits.

Diversions

14. The SACTN contains an assessment of the volume of traffic likely to divert via the McDonalds roundabout at Swaffham and the Yaxham Road grade separated junction at Dereham, as a result of the implementation of left-in, left-out only operation at access options A and D1. This assessment appears to be soundly based and reveals that up to 65 vehicles per day (up to 36 per peak hour) are expected to U-turn at Swaffham and up to 49 per day (up to 20 per peak hour) are expected to U-turn at Dereham. These numbers can be accepted as being below the level that would normally trigger a requirement for a junction capacity assessment and, hence, that the impact of this additional traffic at these locations can be accepted as not 'severe'.

Conclusion

15. The updated layouts, traffic management arrangements and traffic flows presented in the SACTN provide sufficient confidence to allow AECOM to advise Highways England that they could now form the basis of an updated Statement of Common Ground indicating Highways England's agreement in principle with the access arrangements proposed.