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MONA OFFSHORE WIND PROJECT

Onshore Substation Site Selection Summary Note

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Image of an offshore wind farm

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Contents

Glossary

Term	Meaning
Applicant	Mona Offshore Wind Limited.
Development Consent Order (DCO)	An order made under the Planning Act 2008 granting development consent for one or more Nationally Significant Infrastructure Project (NSIP).
Mona Offshore Wind Project	The Mona Offshore Wind Project is comprised of both the generation assets, offshore and onshore transmission assets, and associated activities.
Mona Onshore Cable Corridor	The corridor between MHWS at the landfall and the Mona onshore substation, in which the onshore export cables will be located.
Mona Onshore Development Area	The area in which the landfall, onshore cable corridor, onshore substation, mitigation areas, temporary construction facilities (such as access roads and construction compounds), and the connection to National Grid substation will be located
Relevant Local Planning Authority	The Relevant Local Planning Authority is the Local Authority in respect of an area within which a project is situated, as set out in Section 173 of the Planning Act 2008. Relevant Local Planning Authorities may have responsibility for discharging requirements and some functions pursuant to the DCO, once made.
Statutory consultee	Organisations that are required to be consulted by an applicant pursuant to the Planning Act 2008 in relation to an application for development consent. Not all consultees will be statutory consultees (see non-statutory consultee definition).
The Planning Inspectorate	The agency responsible for operating the planning process for NSIPs.

Acronyms

Acronym	Description
CCBC	Conwy County Borough Council
CoCP	Code of Construction Practice
DCC	Denbighshire County Council
DCO	Development Consent Order

1 Onshore Substation Site Selection Summary Note

1.1 Executive Summary

1.1.1.1 This document has been prepared in response to a request by the Examining Authority during Issue Specific Hearing 3 (ISH3) Environmental Matters to submit details of the internal review of the onshore substation site selection and consideration of alternatives following reduction of the onshore substation footprint after statutory consultation on the Preliminary Environmental Information Report.

1.1.1.2 The internal review comprised two aspects: review of potential additional onshore substation locations using the reduced onshore substation footprint; and re-review of discounted onshore substation locations considered as part of the site selection BRAG process.

1.1.1.3 The review of potential additional onshore substation locations concluded that no alternative locations could be identified within the area of search. The review of discounted onshore substation locations concluded that down-selection from seventeen onshore substation options to ten to seven and down to the final two onshore substation options would not have changed with the reduced onshore substation footprint. All onshore substation options that were discounted were discounted due to engineering or siting considerations that were not addressed by a reduced footprint.

1.2 Introduction

1.2.1.1 This document has been prepared in response to a request by the Examining Authority during Issue Specific Hearing 3 (ISH3) Environmental Matters to submit details of the internal review of the onshore substation site selection and consideration of alternatives following reduction of the onshore substation footprint after statutory consultation of the Preliminary Environmental Information Report.

1.2.1.2 This action is recorded in the Hearing Summary (ISH3) Environmental Matters [REP4-032] as:

The Applicant confirmed that it has undertaken an internal retrospective assessment of whether reduction to a 65,000m^2 substation footprint would change the conclusions of the site selection process. The Applicant confirmed that if the original assessment was undertaken on the basis of a 65,000m^2 substation footprint, additional sites may have been brought into the consideration of alternatives assessment that were not available under the 125,000m^2 footprint. Despite this, an assessment undertaken on the basis of the reduced substation footprint would not have changed the conclusions of the BRAG assessments undertaken, which are primarily driven by the hard constraints which defined the 5 initial search zones as mentioned above. The Applicant confirmed that, whilst an assessment based on the reduced substation footprint may have increased some space and capacity for mitigation, where an option was identified as black under the BRAG assessment, this finding would not change due to the reduction in substation footprint. The Applicant agreed to submit a note to confirm the status of its internal review [post hearing note: which will be submitted at Deadline 5].i

1.3 Response

1.3.1 Background

1.3.1.1 During ISH3 the Applicant stated (as recorded within REP4-032):

Following commentary at PEIR, the Applicant confirmed that it included a reduction in physical footprint of the substation in its application due to comments from Denbighshire County Council (DCC) through a commitment to use gas insulated switch gear (GIS) technology. The Applicant confirmed that it reduced the substation footprint from 125,000m^2 to 65,000m^2, the maximum building height from 20m to 15m and the land temporarily required for construction from 250,000m^2 to 150,000m^2.

1.3.1.2 The reduction in the onshore substation footprint, and the decision-making that supported this reduction, is outlined within Section 4.11.7 of the Site Selection and Consideration of Alternatives chapter [AS-016].

1.3.1.3 Following the reduction in the onshore substation footprint, the design parameters that were used to inform the final selection of an onshore substation location (between Option 2 and Option 7) were:

- A footprint of up to 65,000 m^2 for the indicative onshore substation footprint
- Structures (i.e. buildings) will be up to 15 m tall
- The onshore substation will require land for temporary construction works (e.g. welfare, parking, storage areas and associated temporary access tracks) and a temporary construction compound footprint of up to 150,000 m^2.

1.3.2 Purpose of the document

1.3.2.1 Following the decision to reduce the onshore substation footprint after PEIR statutory consultation, the Applicant undertook an internal review of the decision-making to ensure that the final two locations being considered at this stage of the process were still the appropriate options to consider. This review was undertaken internally with the same set of inputs as for the previous site selection and consideration of alternatives process (as per the methodology of the BRAG assessment outlined in Section 1.2.2 of APP-082) including technical expertise of consultants and experience of the Applicant including engineering support.

1.3.2.2 The purpose of this review of onshore substation site selection and consideration of alternatives summary note is to set out the information from the internal review (and supplement with additional observations) for the benefit of the Examining Authority and Interested Parties.

1.3.2.3 The note provides a description of the process for that internal retrospective review of the onshore substation site selection; identification of any potential additional sites that could have been considered with a reduced onshore substation footprint and their performance against the BRAG criteria ; and review of the primary factors for discounting the initial onshore substation locations against the reduced onshore substation footprint.

1.3.2.4 The note also provides a high-level review of other BRAG assessment considerations against the reduced onshore substation footprint.

1.3.3 Overview of the onshore substation site selection and consideration of alternatives principles and decision-making

1.3.3.1 Long listing of the reduced footprint of the onshore substation took place through reference to the onshore substation area of search, combined with the application of the design principles, engineering assumptions, and the relevant guidance relating to the siting of above-ground electrical infrastructure (e.g. Horlock Rules).

1.3.3.2 Potential onshore substation locations, based on environmental constraints and available land parcels were identified in line with the design parameters and space requirements.

1.3.3.3 Mapping of the same long-listing process with a smaller onshore substation footprint is illustrated in Figure 1.1. This exercise intentionally focussed on the onshore substation 5 km search radius and within Zone 5 as aligned with the search zone appraisal described in Table 4.10 of AS-016. This was a GIS-led process seeking to identify land parcels that avoided the hard constraints identified in AS-016 such as areas of infrastructure, landfills, roads, railways and National Grid overhead lines.

1.3.3.4 The purpose of the review exercise was to identify parcels of land that were potential additional onshore substation option locations that may not have previously been identified as suitable considering the space requirements for the onshore substation. This exercise was focussed on the consideration of alternatives.

1.3.3.5 The previously identified onshore substation long list options are identified as the 17 red boxes. Potentially additional onshore substation options are identified as black boxes.

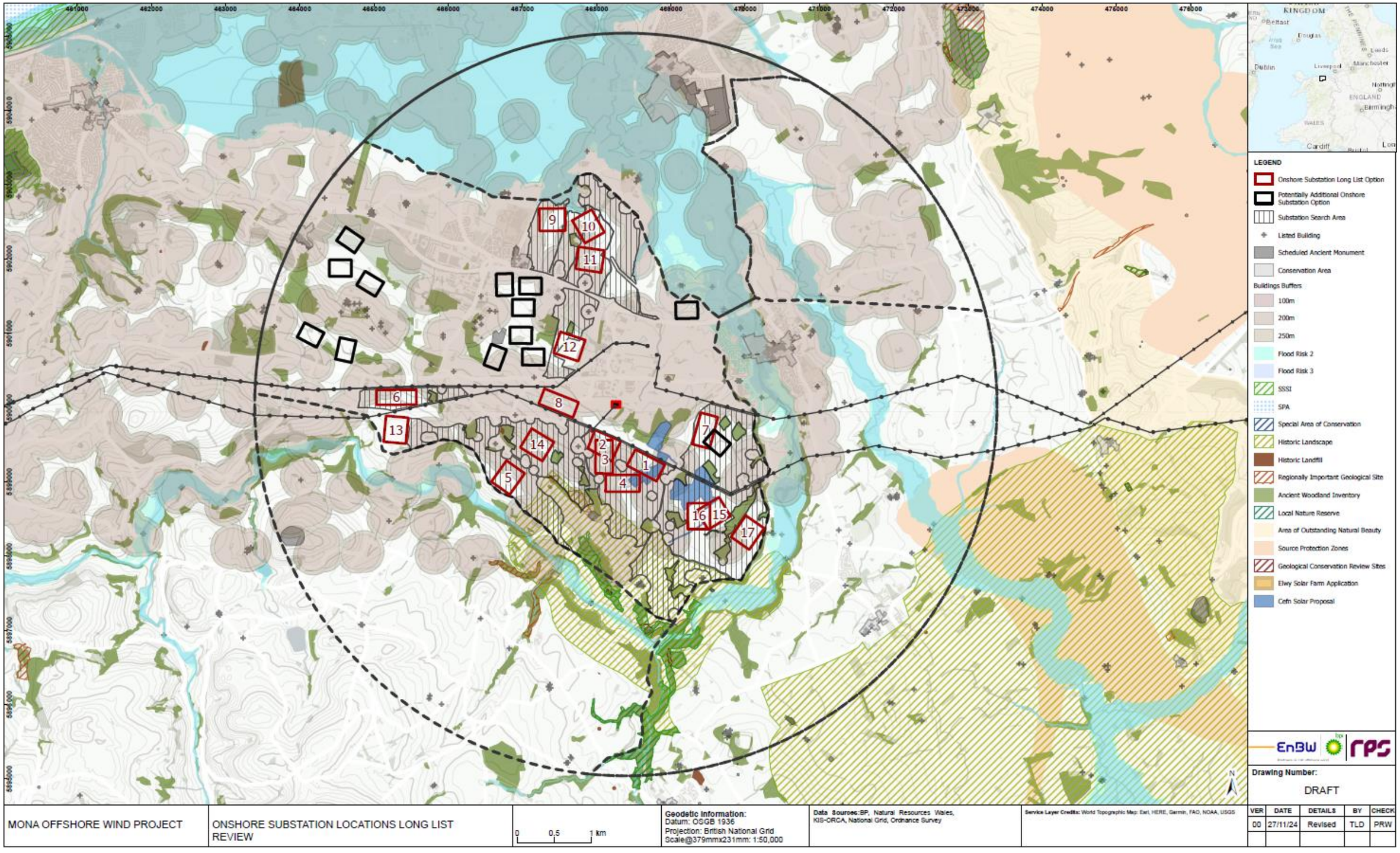

Figure 1.1: Onshore Substation Locations Long List Review

1.4 Identification of 'Potential Additional' Onshore Substation Locations

1.4.1.1 Figure 1.1 identifies 'potential additional onshore substation locations as black boxes within the Zone 5 area of search.

1.4.1.2 These fall broadly into four categories:

- Five onshore substation locations at the western extremity of the search area (Kinmel Estate);
- Five onshore substation locations immediately west of the Awel y Mor onshore substation (Bodelwyddan Castle Estate);
- One onshore substation location immediately north of the A55 and west of the A525 (Elwy Solar Farm and Energy Storage Park); and
- One onshore substation immediately east of Onshore Substation Option 7.

1.4.2 Onshore substation locations within Registered Park and Garden

1.4.2.1 Five 'potential additional' onshore substation locations were identified within the Kinmel Estate, and five 'potentially additional' onshore substation locations were identified within the Bodelwyddan Castle Estate. Both Kinmel Estate and the Bodelwyddan Castle Estate are designated as Registered Park and Garden.

1.4.2.2 All onshore substation locations located within the Kinmel Estate and the Bodelwyddan Castle Estate were previously screened out (discounted as alternatives during the site selection and consideration of alternatives process as outlined in (AS-016)) as Registered Park and Gardens were identified as a hard constraint as "potential constraints to development" in APP-082 and illustrated in Figure 1.1.

1.4.2.3 Therefore these 'potential additional' onshore substation locations were also screened out for the same reasons of being located within Registered Park and Garden

1.4.3 Onshore substation location at Elwy Solar Farm and Energy Storage Park

1.4.3.1 One 'potential additional' onshore substation location was on the site of the proposed Elwy Solar Farm and Energy Storage Park.

1.4.3.2 This onshore substation location was previously previous screened out (discounted as an alternative during the site selection and consideration of alternatives process as outlined in (AS-016)) as this was the planned site of the Elwy Solar Farm and Energy Storage Park and therefore was identified as a hard constraint as "potential constraints to development" in the Site Selection BRAG Report (APP-082) and illustrated in Figure 1.1.

1.4.3.3 The Elwy Solar Farm and Energy Storage Park has subsequently been refused planning permission. It was rejected on the grounds that the site was classified as "Best and Most Versatile Agricultural Land" (BMVAL).

1.4.3.4 Land Use is one of the criteria identified within the BRAG assessment (see Section 1.2.4 of APP-082) site selection process and includes consideration of Agricultural Land Classifications The internal review of the onshore substation site selection and consideration of alternatives process considered that this location would score Black

for Land Use within a BRAG assessment due to the requirement for permanent loss of BMVAL; and the associated rejection of a planning application at this location for this reason. Therefore, this 'potential additional' onshore substation location would be discounted for its siting on BMVAL

1.4.4 Onshore substation Option 7 Alternatives Orientation

1.4.4.1 The onshore substation site immediately east of Onshore Substation Option 7 was included within the consideration of onshore substation orientations following the Section 42 consultation and selection of Option 7 as one of the final two onshore substations. The orientation of the onshore substation at this location was reviewed as part of the construction layout feasibility exercise identified in Figure 1.6 of the Site Selection BRAG Report (APP-082).

1.4.5 Conclusion

1.4.5.1 The review of 'potential additional' onshore substation locations did not identify any onshore substation locations options that needed to be included within the initial site selection and consideration of alternatives process if a smaller onshore substation footprint had originally been identified.

1.5 Review of Onshore Substation Appraisal

1.5.1.1 The review of the onshore substation appraisal focused on the preliminary review of long list constraints and LVIA risks (as per Table 4.19 of AS-016) and the BRAG assessment of development considerations for the medium-list of potential onshore substation locations (as per Table 1.2 of APP-082).

1.5.1.2 The primary reason for discounting onshore substation options at the preliminary review of long list constraints and LVIA risks was reviewed against the reduced onshore substation footprint. Table 1.1 reviews those onshore substation locations that were discounted at this stage. Onshore substation options 1 to 17 are illustrated on Figure 1.1.

Table 1.1: Review of discounted long-list onshore substation options against reduced footprint

Option	Primary Reason for Discounting	Change in conclusion using reduced footprint?
9	Land was subject to outline planning application for 1,700 dwellings.	No
10	Land was subject to outline planning application for 1,700 dwellings.	No
11	Land was subject to outline planning application for 1,700 dwellings.	No
12	Land was subject to the Development Consent Order application for the Awel y Mor Offshore Wind Farm.	No
13	Location is on a ridgeline with steep gradients and is not appropriate from an engineering, access or landscape perspective.	No
14	Location is on a ridgeline with steep gradients and is not appropriate from an engineering, access or landscape perspective.	No
15	Removed from consideration due to similarities with Option 16 and micro-siting could consider both locations. Option 15 had a slightly more settled rural character compared to Option 16.	No

1.5.1.3 A BRAG assessment was undertaken for the remaining medium list options at this stage of the onshore substation site selection and consideration of alternatives process.

1.5.1.4 Three options were discounted at this stage. The primary reason for discounting onshore substation options at the BRAG assessment of medium list options was reviewed against the reduced onshore substation footprint. Table 1.2 reviews those onshore substation locations discounted at this stage. Onshore substation options 1 to 17 are illustrated in Figure 1.1.

Table 1.2: Review of discounted medium-list onshore substation options against reduced footprint

Option	Primary Reason for Discounting	Change in conclusion using reduced footprint?
8	Potential visual amenity impact on nearby residential community and location on top of Awel y Mor 400kV cable route	No
16	Access to onshore substation option had significant implementation and health and safety concerns	No
17	Access to onshore substation option had significant implementation and health and safety concerns	No

1.5.1.5 A targeted non-statutory onshore substation consultation was run on the remaining short list options at this stage of the onshore substation site selection and consideration of alternatives process.

1.5.1.6 Five options were discounted at this stage. The primary reason for discounting onshore substation options at the BRAG assessment of short list options was reviewed against the reduced onshore substation footprint. Table 1.3 reviews those onshore substation locations discounted at this stage. Onshore substation options 1 to 17 are illustrated in Figure 1.1.

Table 1.3: Review of discounted short-list onshore substation options against reduced footprint

Option	Primary Reason for Discounting	Change in conclusion using reduced footprint?
1	Located on proposals for St Asaph Solar Farm	No
3	Alternative orientation to Option 2 but required significantly more excavation due to topography	Orientation of onshore substation footprint would have been included as consideration for construction feasibility (e.g. Figure 1.6 of APP-082)
4	Located on proposals for St Asaph Solar Farm	No
5	Location is associated with steep gradients, access and landscape visibility	No
6	Location is on a ridgeline with steep gradients and is not appropriate from an engineering, access or landscape perspective.	No

1.5.1.7 A BRAG assessment was undertaken for the remaining two options considered within the PEIR and consulted against within Section 42 statutory consultation. This comprised the final stage of the onshore substation site selection and consideration of alternatives process. At this point, the onshore substation footprint was reduced in size in response to statutory consultation responses. The BRAG assessment of the final two options was undertaken with the parameters outlined in Section 1.3.1 (i.e. the reduced onshore substation footprint).

1.6 Conclusion

1.6.1.1 The internal review of the site selection and consideration of alternatives process demonstrated that the down-selection from seventeen onshore substation options to ten to seven and down to the final two onshore substation options would not have been influenced by a reduced onshore substation footprint.

1.6.1.2 All onshore substation options that were discounted were discounted due to engineering or siting considerations that could not beaddressed by a reduced footprint.

1.6.1.3 Through the internal review the Applicant was able to conclude that the site selection and consideration of alternatives process was robust and did not require re-assessment.