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1. INTRODUCTION

1.1 Background

1.1.1 SSE Generation Limited (the Applicant) submitted an application to the Scottish Ministers under Section 36C of the Electricity Act 1989 (the 1989 Act) on 26 August 2020 (ECU application reference: ECU00002133). The application sought to vary the 2018 Consent for Strathy South Wind Farm by increasing the maximum tip height of the 39 consented turbines from 135 m to up to 200m. The consultation response received from The Highland Council (THC) and dated 15 June 2021 raised no objection to the application subject to the removal of four turbines (T35, T36, T29 and T41) from the application.

1.1.2 The following defined terms are used throughout this Supplementary Information Report (this report):

- 39 Turbine Proposed Varied Development: means the Strathy South Wind Farm 39 turbine layout as assessed in the 2020 EIAR.
- 35 Turbine Proposed Varied Development: means the Strathy South Wind Farm as now proposed following The Highland Council's request to remove T35, T36, T37 and T41 (note that the 35 Turbine Proposed Varied Development was referred to as the Proposed Varied Development in the 2020 EIAR).
- 2020 EIAR: means the Environmental Impact Assessment Report as submitted in August 2020 which assessed the likely significant effects of the 39 Turbine Proposed Varied Development.

Unless otherwise defined in this report, defined terms have the meaning ascribed to them in the Glossary of Terms included with the 2020 EIAR.

1.2 Purpose of Report

1.2.1 The Scottish Ministers have sought supplementary information from the Applicant under regulation 19 of The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 (the EIA regulations), in order to reach a reasoned conclusion on the likely significant effects of the 35 Turbine Proposed Varied Development, with reference to schedule 4 of the EIA regulations.

1.2.2 The Applicant submits this report in response to the regulation 19 request. This report identifies and assesses the changes (or lack thereof) to the likely significant effects reported in the 2020 EIAR as a result of the removal of T35, T36, T39 and T41. This report will also assess any changes to the likely significant effects as presented in the 2020 EIAR from the resulting modification to the track network, the re-positioning of LiDAR A and a modification to the approved aviation lighting scheme.

1.2.3 Details of the changes from the 39 Turbine Proposed Varied Development to the 35 Turbine Proposed Varied Development is presented in Section 2: Description of Development. More detailed information regarding changes to the assessment of environmental effects is presented in sections 4-12 of this report.

1.2.4 As implied by the title of this report, the information presented here is to supplement the information already provided in the 2020 EIAR, and therefore should be read alongside the 2020 EIAR. The conclusions of the 2020 EIAR remain valid, except where otherwise stated within this report or accompanying Technical Appendices.

1.2.5 In accordance with regulation 5(5) of the EIA regulations, this report has been prepared by competent experts. Each of the following sections 4 – 12 has been produced with input from the original chapter authors responsible for the preparation of the 2020 EIAR. This report has been reviewed and approved by an EIA practitioner with more than 15 years' experience, holding

relevant undergraduate and post graduate degrees, professional membership (MIEMA) and Chartered Environmentalist (CEnv) professional accreditations. Full details of accreditations and experience can be found in Technical Appendix 1.2 of the 2020 EIAR.

1.3 Structure of Report

1.3.1 This report is structured as follows:

- Section 2: Description of Development provides an overview of the 35 Turbine Proposed Varied Development and describes elements of the proposals where amendments have been made to the track network, the re-positioning of LiDAR A and a modification to the approved aviation lighting scheme as a result of the removal of T35, T36, T39 and T41.
- Section 3: Effects of Design Change on Conclusions of the 2020 EIAR provides a review of the environmental effects as a result of the removal of T35, T36, T39 and T41, where a difference occurs between the significant effects of the 39 Turbine Proposed Varied Development (assessed in the 2020 EIAR) and the 35 Turbine Proposed Varied Development.
- Sections 4 - 12: Summary of Changes of Likely Significant Effects in relation to different topic areas and assesses any changes (or lack thereof) in the significance of effects between the 35 Turbine Proposed varied Development and the 39 Turbine Proposed Varied Development (as assessed in the 2020 EIAR).

2. DEVELOPMENT DESCRIPTION

2.1 Summary of Changes

2.1.1 This section provides a description of the 35 Turbine Proposed Varied Development.

2.1.2 The 35 Turbine Proposed Varied Development would comprise 35 turbines with internal transformers, associated infrastructure and ancillary development. Figure 2.1a shows the key changes from the 39 Turbine Proposed Varied Development.

2.1.3 The 35 Turbine Proposed Varied Development would include the following key components:

- 35 turbines, each with a maximum tip height of 200 m and rotor diameter of up to 162 m, and associated crane pads;
- Turbine foundations and hardstandings;
- Access tracks;
- Watercourse crossings;
- Substation;
- Up to seven borrow pits;
- Temporary lay down areas;
- Temporary construction compounds;
- Temporary batching plant;
- Two permanent LiDAR; and
- Welfare building.

2.1.4 Table 2.1 below provides a summary of where the removal of T35, T36, T39 and T41 has resulted in changes between the 39 Turbine Proposed Varied Development and the 35 Turbine Proposed Varied Development.

Table 2.1: Summary of Key Changes between the 39 Turbine Proposed Varied Development and the 35 Turbine Proposed Varied Development

Infrastructure Element	39 Turbine Proposed Varied Development	35 Turbine Proposed Varied Development	Summary of Changes
No. of Turbines	39	35	Removal of four turbines
Tip Height	Up to 200 m	Up to 200 m	No change
Rotor Diameter	Up to 162 m	Up to 162 m	No change
Hub Height	119 m	119 m	No change
Access Track Length	31.4 km	24.8 km	A reduction in track length of 6km associated with the removal of T35, T36, T39 and T41 and repositioning of LiDAR A.
Turbine Foundations & Hardstanding	Temporary infrastructure land take (per turbine): 0.080 hectares (ha). Permanent land take (per turbine): 0.250 (ha).	Temporary infrastructure land take (per turbine): 0.080 hectares (ha). Permanent land take (per turbine): 0.250 (ha).	No change per turbine (but 1 ha less permanent land take overall)
Borrow Pits	Up to seven borrow pits	Up to seven borrow bits.	No change

Table 2.1: Summary of Key Changes between the 39 Turbine Proposed Varied Development and the 35 Turbine Proposed Varied Development			
Lighting	At the point of submission aviation lighting was proposed for all 39 turbines. The Civil Aviation Authority subsequently agreed to a reduced lighting strategy with 6 turbines lit. (T2, T15, T26, T35, T49, T69)	The following 6 turbines will be fitted with 2000 cd medium intensity red lighting to nacelle: T2, T15, T26, T33, T49 and T69. This lighting will be capable of being dimmed to 10% of 2000 cd where visibility extends beyond 5km.	Six turbines (T2, T15, T26, T33, T49 and T69) will be fitted with 2000cd medium intensity red lighting. At the time of submission of the 2020 EIAR the lighting assessment assumed a worst-case scenario of all 39 turbines being fitted with visible lighting. Full details of the aviation lighting assessment can be found in Technical Appendix 4.2.
Substation	The proposed substation and associated temporary laydown area are now located to the west of T4.	The proposed substation and associated temporary laydown area are now located to the west of T4.	No change
Laydown Areas	Two laydown areas; one located to the north of T43 and one located to the east of the track between T11 and T17.	Two laydown areas; one located to the north of T43 and one located to the east of the track between T11 and T17.	No change
Construction Compounds	One construction compound located to the east of T4.	One construction compound located to the east of T4.	No change
Permanent Met Masts/LiDAR	Two permanent LiDAR; one located southeast of T36 and one located west of T70.	Two permanent LiDAR are proposed. The location of LiDAR A has been adjusted following the removal of the four turbines.	LiDAR A has been repositioned to avoid the need for excess access track construction.
Concrete Batching Plant	One 100 m x 100 m batching plant located to the east of the track between T11 and T17.	One 100 m x 100 m batching plant located to the east of the track between T11 and T17.	No change
Watercourse Crossings	16 watercourse crossings	16 watercourse crossings	No change
Yellow Bog Road	Proposal to upgrade Yellow Bog Road for initial construction phase.	Proposal to upgrade Yellow Bog Road for initial construction phase.	No change

2.1.5 The turbine locations for the 35 Turbine Proposed Varied Development are unchanged from those for the 39 Turbine Proposed Varied Development. Turbine numbering has also been retained and corresponds to the numbering which was presented in the Original 2007 Environmental Statement (ES), 2013 ES Addendum, 2014 Further Information Report (FIR) and 39 Turbine Proposed Varied Development as shown in Table 2.2 below and Chapter 2: Description of Development of the 2020 EIAR.

2.2 Turbines

2.2.1 The 35 Turbine Proposed Varied Development would see the removal of four turbines from the 39 Turbine Proposed Varied Development: T35, T36, T39, and T41 as shown in Figure 2.2.

The National Grid References (NGR) for the turbines proposed for retention are presented in Table 2.2.

Table 2.2 Turbine Grid References

Turbine Number	Grid Reference	Turbine Number	Grid Reference
T1	280619 953031	T29	279022 950112
T2	281155 952737	T30	279413 949703
T4	280687 952437	T33	279165 949159
T6	281205 952237	T42	278375 949964
T8	280675 951871	T43	278763 949581
T9	281141 951618	T45	278263 950529
T10	280139 951650	T46	278855 950613
T11	280653 951295	T47	278555 951001
T13	280144 951050	T49	277856 951064
T15	281058 950872	T50	278264 951400
T17	280598 950707	T52	277806 951652
T18	281049 950334	T56	278297 951962
T19	280030 950461	T57	278737 951687
T20	280413 950162	T61	279119 952086
T22	279973 949829	T69	278372 953507
T24	280781 949792	T70	278683 953059
T26	280279 949361	T72	279165 953538
T28	279786 949085		

As set out in Section 2.2.6 (Chapter 2: Development Description ((EIAR Volume 2)) of the 2020 EIAR, it is proposed that an increased micrositing allowance of up to 100 m would be permitted for T1, T9, T14, T18, T33, T42, T29, T52, T57, T69 and T72.

Turbine parameters would remain unchanged:

- maximum tip height 200 m.
- maximum modelled rotor diameter 162 m.
- maximum modelled hub height 119 m.

2.3 Approved Lighting scheme

2.3.1 At the time of submission of the 2020 EIAR, no aviation lighting scheme had been approved by the Civil Aviation Authority (CAA). As such, the 2020 EIAR presented the worst-case scenario of all 39 turbines being fitted with 2000 cd medium intensity red lighting. On 18 March 2021 the CAA approved the Applicant's proposed lighting scheme to reduce the number of turbines to be fitted with visible lighting to six: T2, T15, T26, T35, T49 and T69. In April 2021, the Applicant submitted additional information to update the lighting assessment as presented in the 2020 EIAR.

2.3.2 On 15 June 2021, THC raised no objection to the 39 Turbine Propose Varied Development subject to the removal of 4 turbines. One of these turbines was T35, the removal of which would impact the lighting scheme as approved by the CAA on 18 March 2021. On 25 June 2021, the CAA approved a revised lighting scheme. As such, it is proposed that the following turbines will be fitted with 2000 cd medium intensity red lighting: T2, T15, T26, T33, T49 and T69.

2.4 LiDAR

2.4.1 The 2020 EIAR assessed two permanent LiDARs for wind measurement and their locations and layout are shown on Figure 2.1 and Figure 2.11 of the 2020 EIAR (Volume 3a: Figures). LiDAR A being located to south east of T35 and LiDAR B being located to the west of T70.

2.4.2 Due to the removal of T35 LiDAR A will be relocated to the south west of T43 (278133, 949584), as shown in Figure 2.1a. LiDAR B will remain to the west of T70 as described in section 2.4.20 or the 2020 EIAR.

3. COMPARATIVE ENVIRONMENTAL ASSESSMENT

3.1 Introduction

3.1.1 Regulation 28(2)(c)(i) of the EIA regulations requires that an EIAR for variation applications include a description of "*the main respects in which the developer considers that the likely significant effects on the environment of the proposed varied development would differ from those described in any EIA report or environmental statement, as the case may be, that was prepared in connection with the relevant section 36 consent*."

3.1.2 Chapter 3 of the 2020 EIAR provides a summary comparative environmental assessment to address the Regulation 28 requirement, drawing together the conclusions from the technical assessment topic chapters; (2020 EIAR Volume 2: Chapters 4 - 12), with reference to the earlier EIA reports or Environmental Statements produced for the various iterations of the consented Strathy South Wind Farm design.

3.1.3 As part of preparing this supplementary information, consideration has been given to likely changes to the findings presented in the 2020 EIAR. While the request from THC for the removal of four turbines is intended to reduce the likely significant effects, the removal when considered in the context of the 39 Turbine Proposed Varied Development as a whole is likely to result in a low magnitude of change and is not considered to materially change the conclusions presented in the 2020 EIAR. The only exception to this is in relation to aviation lighting. Table 3.1 of the 2020 EIAR concluded that "*In the absence of an agreed scheme of mitigation, aviation lighting effects would result in significant effects. The Applicant is engaging with aviation stakeholders and the CAA to agree an aviation lighting solution which could result in a reduced visual effect*". The Applicant is now in a position to confirm that an aviation lighting scheme has been approved by the CAA which results in reduced visual effects and Appendix 4.2 of this report provides full details of the impacts of the approved lighting scheme.

3.1.4 No further update to the comparative assessment for regulation 28 is considered necessary.

4. LANDSCAPE AND VISUAL IMPACT ASSESSMENT

4.1 Introduction

4.1.1 The purpose of this supplementary information is to provide an understanding of how the Landscape and Visual Effects arising from the 35 Turbine Proposed Varied Development layout compare with those described for the 39 Turbine Proposed Varied Development layout as assessed in the 2020 EIAR (Chapter 4: Landscape and Visual Amenity (2020 EIAR Volume 2)). In addition, this supplementary information includes consideration of the cumulative effects in relation to changes to the cumulative development baseline as outlined below.

4.1.2 This assessment is supported by the figures listed in Table 1 below.

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Figure 4.6d – VP1: Ben Griam Beg 50mm Single Frame Photomontage
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Figure 4.17 – VP12: Moine House Baseline Photo and Wireline
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Figure 4.19 – VP14: Dunnet Head Baseline Photo and Wireline
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TA 4.2 – Modified Cardinal Lighting Strategy Landscape and Visual Assessment

4.2 Visual Assessment Review

4.2.1 The 35 Turbine Proposed Varied Development incorporates the removal of four turbines (T35, T36, T29 and T41) and associated track infrastructure, which has the potential to change the effects assessed and presented in Chapter 4 of the 2020 EIAR (EIAR Volume 2). This summary focusses on

the implications of these changes on the six key viewpoints of concern to THC and compares them to those arising from the 39 Turbine Proposed Varied Development. A brief summary of potential changes to other viewpoints is also provided. This approach was agreed following discussions between the Applicant and consultees, including THC and the Energy Consents Unit (ECU).

Assessment Scope

4.2.2 As agreed with THC and ECU this summary will focus on the potential changes to the following viewpoints arising as a result of the removal of the four turbines:

- VP1: Ben Griam Beg;
- VP5: Strathy;
- VP6: Bettyhill Viewpoint;
- VP7: A836 west of the B871;
- VP10: Beinn Ratha; and
- VP11 Forsinard.

4.2.3 A brief summary of the potential changes to the remaining eight viewpoints assessed as part of the 2020 EIAR is also provided.

4.2.4 Given the changes to the cumulative development baseline, albeit minor, which have taken place since the submission of the 2020 EIAR, a review of the potential changes to the cumulative assessment for the six key viewpoints has also been undertaken.

4.2.5 As outlined in Table 1 above updated ZTVs and cumulative ZTVs visualisations for the above six viewpoints and wirelines for the remaining eight viewpoints are also provided to allow for comparison with those included in the 2020 EIAR. All of the viewpoints included in the 2020 EIAR are illustrated on Figures 4.3a and 4.3b.

Design Comparison

4.2.6 In terms of assessing any potential change of impacts, the relevant design change is the removal of four turbines from the 39 Turbine Proposed Varied Development. The turbine scale would not change and while the overall turbine numbers would be reduced, the perceived scale of the development and the development as a whole would not change when comparing the 35 Turbine Proposed Varied Development to the 39 Turbine Proposed Varied Development. Associated reductions to the track layout, and hardstanding, while considered to represent reductions in potential impact on the immediate area, would be unlikely to result in changes to the assessed effects when seen in the context of the overall 35 Turbine Proposed Varied Development.

Changes Arising from the 35 Turbine Proposed Varied Development Layout

VP1: Ben Griam Beg

4.2.7 The removal of T35, T36, T39 and T41 turbines would reduce the horizontal spread of the turbines to the west, resulting in an increased visual cohesion of the overall scheme from this viewpoint.

4.2.8 The 2020 EIAR identified Major (significant) effects from this viewpoint. Despite the increased visual cohesion noted above, the predicted effects would remain unchanged from those reported in the 2020 EIAR.

4.2.9 *V5: Strathy*

4.2.10 The horizontal spread of the turbines would be unchanged due to the removal of the four turbines. However, the 35 Turbine Proposed Varied Development would result in an improved composition with less overlapping and stacking of turbine blades in the view beyond Strathy North.

4.2.11 The 2020 EIAR identified Minor (not significant) effects from this viewpoint. Despite the improvements to the composition, the predicted effects would remain unchanged from those reported in the 2020 EIAR.

VP6: Bettyhill Viewpoint

4.2.12 The reduction in turbines would reduce the horizontal spread of the turbines westward to the right of the view. The removal of T35 and T41 in particular would reduce the appearance of turbines reaching into a different landscape as all of the turbines would be contained behind the ridgeline.

4.2.13 The 2020 EIAR identified Moderate (significant) effects from this viewpoint. Despite these changes, the predicted effects would remain unchanged from those reported in the 2020 EIAR.

VP7: A836 west of the B871

4.2.14 T35, T36, T39 and T41 sit apart from the main cluster of turbines in this view. Removal of these turbines would reduce the horizontal spread of the development to the right of the view and result in increased visual cohesion from this viewpoint.

4.2.15 The 2020 EIAR identified Moderate (significant) effects from this viewpoint. Despite the removal of the four turbines, the predicted effects would remain unchanged from those reported in the 2020 EIAR.

VP10: Beinn Ratha

4.2.16 Removal of the four turbines would not reduce the horizontal spread of the development in this view. However, it would reduce the stacking and overlap of turbines in the central part of the development as seen from this view. This would result in an improvement to the composition from this viewpoint.

4.2.17 The 2020 EIAR identified Minor-Moderate (not significant) effects from this viewpoint. Despite the improvements to the composition noted above, the predicted effects would remain unchanged from those reported in the 2020 EIAR.

VP11: Forsinard

4.2.18 T39 and T41 would not be visible from VP11: Forsinard. As such, their removal would not result in any improvements to the composition of the development or reduction in horizontal spread. T35 and T36,theoretically appear as tips over the ridgeline apart from the main cluster of turbines in this view. However, given that they would only be theoretically visible as tips, their removal is unlikely to result in any noticeable improvements to the appearance of the development from this viewpoint.

4.2.19 The 2020 EIAR identified Minor (not significant) effects from this viewpoint. The predicted effects from this viewpoint would remain unchanged from those reported in the 2020 EIAR.

Other Viewpoints

4.2.20 Eight additional viewpoints were assessed as part of the 2020 EIAR. These are listed below along with the level of effect of the Proposed Varied Development 39 turbine layout identified in the 2020 EIAR.

- VP2: Cnoc Riabhach (Minor – Moderate);
- VP3: Loch nan Clach Geala (Moderate);
- VP4: East of Melvich (Minor);
- VP8: Sgor Chaonasaid (Minor – Moderate);
- VP9: Creag na h-Iolaire (Minor);
- VP12: Moine House (Negligible);
- VP13: A836 near Middleton (Negligible); and

- VP14: Dunnet Head (Negligible).

4.2.21 Wirelines for the above eight viewpoints illustrating the 35 Turbine Proposed Varied Development are provided in Figures 4.12 – Figure 4.19. As shown by the wirelines, the removal of the four turbines would generally reduce the horizontal spread of the development when seen from the northwest, south and southeast. It would reduce stacking and overlapping blades when seen from the north, northeast and southwest. Despite these improvements to the composition of the turbines, the predicted effects for these viewpoints would remain unchanged from those reported in the 2020 EIAR.

4.3 Cumulative Assessment Review

4.3.1 A review of the status of sites included in the 2020 EIAR cumulative landscape and visual impact assessment (the 2020 CLVIA) was undertaken in July 2021 based on information available in the THC wind farm dataset[1] and through consultation with THC. It was found that during the intervening period from the 2020 EIAR cumulative search being undertaken in January 2020 the following changes had taken place:

- Ackron wind farm had progressed from scoping to application with a revised 12 turbine layout at 149.9m to tip.
- Drum Hollistan wind farm application had been submitted for seven turbines at 125m to tip but the application had been refused by THC. This decision is being appealed.
- Limekiln wind farm, which was previously consented, is preparing to submit an application to increase the height of all of the turbines to 149.9m to tip.
- Limekiln Extension application had been submitted for five turbines at 149.9m to tip. THC has raised an objection and the project is progressing through a public local inquiry.

4.3.2 Having reviewed the locations of these developments, they would potentially add to and / or alter existing clusters to the east of Melvich and South of Reay. It is considered unlikely that they would significantly alter the potential impacts associated with the existing clusters which have previously been identified and assessed.

4.3.3 The focus of this review is therefore on the changes from the 39 Turbine Proposed Varied Development to the 35 Turbine Proposed Varied Development as viewed from the six key viewpoints of concern identified by THC rather than to revisit the whole 2020 CLVIA.

VP1: Ben Griam Beg

4.3.4 The additions and changes to the cumulative development baseline would appear to the northeast of the 35 Turbine Proposed Varied Development. They would appear as part of the clusters to the east of Melvich and south of Reay included in the 2020 CLVIA. The relationship of the 35 Turbine Proposed Varied Development to the cumulative development baseline would remain largely unchanged. As shown in Figure 4.6f, it would continue to extend the horizontal spread westward within this panoramic view, although this would be reduced due to the removal of T35, T36, T39 and T41. It would however continue to be seen in the nearer mid-ground in combination with the cluster of Strathy North and Strathy Wood wind farm turbines and would increase the prominence of wind turbines in the area largely due to its proximity. While the overall prominence of turbines in the view would be increased, this is unlikely to dominate or obstruct the view when considered in the context the wider panoramic view which includes a number of large-scale turbines. There is therefore no change from the Moderate (significant) effect identified in the 2020 EIAR.

[1] The Highland Council (2020) Renewable Energy: Wind Turbine Map and Database - https://www.highland.gov.uk/info/198/planning_-_long_term_and_area_policies/152/renewable_energy/4 [accessed July 2021]

V5: Strathy

4.3.5 None of the additions or changes to the cumulative baseline would be seen from this viewpoint. The reduction of overlapping turbines due to the removal of T35, T36, T39 and T41 would result in a slight improvement to the overall composition when seen in combination with Strathy North and Strathy Wood as shown in Figure 4.7f. Despite these minor improvements, the predicted effects from this viewpoint would remain unchanged from the Minor-Moderate (not-significant) effect identified in the 2020 EIAR.

VP6: Bettyhill Viewpoint

4.3.6 None of the additions or changes to the cumulative development baseline would be seen from this viewpoint. Although the 35 Turbine Proposed Varied Development would reduce the horizontal spread of the turbines, its relationship to the Betty Hill wind turbines would remain largely unchanged. There is therefore no change from the Minor-Moderate (not-significant) effect identified in the 2020 EIAR.

VP7: A836 west of the B871

4.3.7 None of the additions or changes to the cumulative development baseline would be seen from this viewpoint. Although the removal of T35, T36, T39 and T41 would reduce the horizontal spread of the development to the right of the view it would not change the relationship of the 35 Turbine Proposed Varied Development to Strathy North and Strathy Wood when compared to the 39 Turbine Proposed Varied Development as shown in Figure 4.9f. Therefore, the predicted effects from this viewpoint would remain unchanged from the Minor-Moderate (not significant) effect identified in the 2020 EIAR.

VP10: Ben Ratha

4.3.8 The additions and changes to the cumulative development baseline would appear to the northeast of the 35 Turbine Proposed Varied Development. The cumulative changes would result in an increase to the prominence of the clusters visible to the northwest and east of this viewpoint. The 35 Turbine Proposed Varied Development would still appear to the west as part of the cluster with Strathy North and Strathy Wood and its relationship to this cluster and the wider cumulative development baseline would not change as shown in Figure 4.10f. As a result, although the changes to the cumulative development baseline would be noticeable from this viewpoint, the predicted effects from this viewpoint would remain unchanged from the Minor (not significant) effect identified in the 2020 EIAR.

VP11: Forsinard

4.3.9 The tips and blades of the cumulative development baseline turbines, including the recent changes to Ackron and addition of Drum Hollistan would theoretically be visible in views northward from this viewpoint. However, foreground vegetation would largely obstruct these views. Given that the cumulative development baseline turbines would largely be screened from view, the predicted effects from this viewpoint would remain unchanged from the Minor-Moderate (not significant) effect identified in the 2020 EIAR.

4.4 Conclusion

4.4.1 The 35 Turbine Proposed Varied Development would result in the removal of four turbines and alternations to the horizontal spread, composition and perception of the development from several viewpoints. However, when appreciated in the context of the overall development, these changes would not result in changes to the effects identified in the 2020 EIAR.

4.4.2 The additions and changes to the cumulative development baseline would add to and / or alter existing clusters to the east of Melvich and south of Reay. The relationship of the 35 Turbine Proposed Varied Development to the cumulative development baseline would remain largely

unchanged. The predicted cumulative effects would remain unchanged from those reported in the 2020 EIAR.

5. ORNITHOLOGY

5.1.1 Chapter 5: Ornithology of the 2020 EIAR established a baseline for the site and assessed in detail the potential for likely significant effects on ornithology receptors resulting from the construction, operation and decommissioning of the 39 Turbine Proposed Varied Development. This assessment considers any changes to the significance of effects as a result of the proposed changes set out in section 2 of this report.

5.1.1 In order to assess the effects of the 35 Turbine Proposed Varied Development on ornithological receptors, consideration was given to the implications of the changes (removal of four turbines, repositioning of the LiDAR A and associated wind farm tracks removal) during construction, operation and decommissioning.

Construction

5.1.2 With four fewer turbines, the extent of the development footprint would be 1 ha less (for permanent hardstanding areas), with 6 km less track than required for the 39 Turbine Porposed Varied Development. This would reduce the extent of permanent habitat loss and the removal of the hardstandings associated with T35, T36, T39 and T41 would increase in the extent of the forest plantation which would then be available for restoration to peatland habitat. The effect would therefore be positive for birds, given reduced land take.

5.1.3 The extent of construction activity would also be reduced and be absent in the south-west corner of the main Site.

5.1.4 As a result of these changes, the risk of construction disturbance effects to breeding birds would be reduced spatially and temporally, compared to the 39 Turbine Proposed varied Development. This includes reduced disturbance of breeding birds in the adjacent Caithness and Sutherland Peatlands SPA/Ramsar site.

Operation

5.1.5 The potential effects on birds from the 39 Turbine Proposed varied Development during operation are:

- Displacement due to the presence of turbines or other wind farm infrastructure;
- Barrier effects, if the presence of the turbines prevents movement across previously used airspace;
- Collision with turbines when birds are in flight; and
- Disturbance from staff, vehicles or other activities during operation or operational maintenance.

5.1.6 The removal of the four turbines and associated infrastructure reduces the extent of displacement risk for birds breeding or foraging in the south west corner of the Main Site. The number of breeding territories within potential displacement distances is limited in number, there being one dunlin, one golden plover and one greenshank territory recorded within 500m of these turbines in any one year, all within the SPA/Ramsar site (from 2018 and 2019 breeding bird survey data). The reduction in the development footprint would result in a lower displacement risk to these birds.

5.1.7 No significant barrier effects were predicted in the 2020 EIAR from the 39 Turbine Proposed varied Development. The removal of the four turbines is not therefore predicted to result in any change to this predicted outcome.

5.1.8 In terms of collision risk, following consultation with the ECU and THC, it was agreed that collision risk modelling did not need to be re-run in order to assess the predicted collision rates with four fewer turbines. This is because having fewer turbines either does not affect collision risk (where there were no 'at risk' flights associated with these turbines), or the collision risk is lower if there were 'at risk' flights within these turbines' airspace. The SPA/Ramsar site qualifying species where

fewer 'at risk' flights would result from removal of the four turbines are black-throated diver, golden eagle and greenshank; and white-tailed eagle, and non-breeding whooper swan, greylag and pink-footed geese for non-SPA/Ramsar site qualifying species.

5.1.9 Finally, the risk of disturbance to breeding or foraging birds from operational activity and maintenance would be reduced, given the smaller infrastructure footprint.

Decommissioning

As with the previous ornithological assessment, it is considered that effects from decommissioning on ornithological receptors would be comparable to the construction phase. These are considered above (see paras. 5.1.2 to 5.1.5), and the same reduction in effects would be predicted.

6. NOISE

6.1.1 Chapter 6: Noise of the 2020 EIAR concluded that the operation of the 39 Turbine Proposed Varied Development would not result in any residual significant effects in terms of noise. The removal of 4 turbines is predicted to reduce the overall noise associated with the 35 Turbine Proposed Varied Development, and as such the conclusions of the 2020 EIAR remain unchanged.

6.1.2 Predicted cumulative noise remains below total ETSU-R-97 limits[2] as detailed in the 2020 EIAR.

[2] The Working Group on Noise from Wind Turbines ETSU for the Department of Trade and Industry (1996) ETSU-R-97 The Assessment and Rating of Noise from Wind Farms.

7. CULTURAL HERITAGE

7.1 Introduction

7.1.1 Chapter 7, Cultural Heritage of the 2020 EIAR established a baseline for the site and assessed in detail the potential for direct and settings effects on archaeology and heritage assets resulting from the construction, operation and decommissioning of the 39 Turbine Proposed Varied Development, including 39 turbines. This assessment considers any changes to the significance of effects as a result of the proposed changes set out in section 2 of this report.

7.1.2 There have been no other changes to relevant legislation or national and local planning policy since the production of the 2020 EIAR.

7.2 Assessment of Residual Effects

7.2.1 Following the change in design to the 35 Turbine Proposed Varied Development, a re-assessment of the residual effects of the 35 Turbine Proposed Varied Development upon the receptors identified in Chapter 7, Cultural Heritage of the 2020 EIAR has been undertaken. This re-assessment assumes that all mitigation detailed within the 2013 ES Addendum and CEMP of the 2020 EIAR Volume 4: Technical Appendix 2.1, is undertaken.

Construction

7.2.2 There have been no changes to the heritage baseline within the site since the 2020 EIAR. The implementation of the mitigation measures identified in the 2013 ES Addendum and CEMP of the 2020 EIAR Volume 4: Technical Appendix 2.1 would prevent inadvertent damage to known heritage features within the site and identify hitherto unknown archaeological remains. Following the completion of construction and decommissioning works no further groundworks would be undertaken. No significant residual direct effects are anticipated and no change to the conclusions of the 2020 EIAR are predicted.

Operation

7.2.3 Direct effects upon any previously unknown archaeological remains which may be present on the site would cease with the completion of the groundworks stage of construction and consequently no direct effects are predicted during the operational phase of the 35 Turbine Proposed Varied Development.

7.2.4 Operational phase effects include impacts upon the settings of designated assets such as Listed Buildings, Scheduled Monuments, Conservation Areas and Inventory Gardens and Designed Landscapes (GDLs). While there are no designated heritage assets within the site, this assessment has identified 47 Scheduled Monuments and 26 Listed Buildings within 15km of the site.

7.2.5 All designated assets located within the 15 km study area and within the ZTV were subject to detailed setting assessment for the 2020 EIAR and were reassessed in light of the 35 Turbine Proposed Varied Development. The Scheduled Tulloch', fortified enclosure (Site 11), Skelpick, long cairn (Site 50), and Carnachy, hut circles, Stratnaver (Site 53) previously identified within the ZTV are, based on the 35 Turbine Proposed Varied Development, located outwith the ZTV and has such would have no intervisibility with the 35 Turbine Proposed Varied Development.

7.2.6 A total of 14 Scheduled Monuments, and five Listed Buildings have been identified within the ZTV for the 35 Turbine Proposed varied Development and are reassessed in this report. Figure 7.1 shows the designated heritage assets within the 15km study area and the ZTV prepared for the 35 Turbine Proposed Varied Development.

7.2.7 The revised settings assessment found that the effect of the 35 Turbine Proposed Varied Development on the setting of designated assets would not be significant as the effects would be

neutral to Minor-Moderate in each case. These findings are detailed in Table 1 within Technical Appendix 1 of the 2020 EIAR and have been informed by ZTV modelling, site visits, photomontages and wireframes contained in the 2020 EIAR (EIAR Volume 3a and 3b and Volume 4: Technical Appendix 7.2 and 7.4).

Additional Mitigation

7.2.8 Mitigation proposals outlined in 2013 ES Addendum and CEMP of the 2020 EIAR Volume 4: Technical Appendix 2.1 are unchanged and remain valid for the 35 Turbine Proposed Varied Development. No additional mitigation is proposed.

7.3 Assessment of Cumulative Effects

7.3.1 The cumulative effects identified in the 2013 ES Addendum and CEMP of the 2020 EIAR Volume 4: Technical Appendix 2.1 would arise from the combined views of the 39 Turbine Proposed Varied Development with operational, consented and within-planning wind farm developments. There would be no change in the level of cumulative effect identified as a consequence of the 35 Turbine Proposed Varied Development.

7.4 Comparison of Effects

7.4.1 The removal of T35, T36, T39 and T41 and associated access tracks and hardstanding for the 35 Turbine Proposed varied Development would result in a reduction in the total number and visible from heritage assets across the 15km study area. A re-assessment of the residual effects of the 39 Turbine Proposed varied Development upon the receptors identified in the 2020 EIAR has been undertaken. Three fewer assets have been identified as having intervisibility with the 35 Trubine Proposed varied Development and overall there will be a reduction in the number of turbines visible.

7.4.2 There is no change to the conclusions detailed in the2020 EIAR. There is judged to be a cumulative Moderate (significant) level of effect on the setting of the Scheduled Ben Griam Beg (Site 15).

8. ROADS AND TRAFFIC

8.1.1 The removal of T35, T36, T39 and T41 will result in a slight decrease in construction phase traffic but this will not materially change the Roads and Traffic Impact Assessment as assessed in the 2020 EIAR (Chapter 8: Traffic and Transport (EIAR Volume 2)). No update to this chapter is considered necessary.

9. ECOLOGY

9.1.1 Chapter 9, Ecology of the 2020 EIAR established a baseline for the site and assessed in detail the potential for likely significant effects on Important Ecological Features (IEFs) resulting from the construction, operation and decommissioning of the 39 Turbine Proposed Varied Development. This assessment considers any changes to the significance of impacts as a result of the proposed changes set out in section 2 of this report.

9.1.2 The 2020 EIAR identified no further effects from the 39 Turbine Proposed Varied Development alone or cumulatively during the construction or operational phases, or for the decommissioning phase over and above those predicted for the consented development.

9.1.3 The proposed removal of four turbines as part of the 35 Turbine Proposed Varied Development would have a beneficial effect to a number of the IEFs identified above. These include:

- A reduction in habitat loss through a decrease in turbine numbers, the associated bases and hard standings and the linking tracks required to access these.
- An opportunity for an increase in early phase habitat restoration in areas in proximity to the Caithness and Sutherland Peatlands Special Area of Conservation due to the location of the removed turbines in proximity to the boundary with the Natura 2000 site.
- A reduced risk of pollution and sedimentation events during the construction phase which may have an adverse effect on aquatic receptors.
- Reduced operational effects and risk to bat species present in the wider area from collision with turbines or from baurotrauma.

9.1.4 In summary, the reduction in turbine numbers for the 35 Turbine Proposed Varied Development would have only beneficial effects on IEFs identified in the 2020 EIAR. No additional adverse effects from the removal of these turbines have been identified and the mitigation previously proposed is deemed to be sufficiently robust to continue to reduce all potential residual effects to IEFs non-significant.

10. SOILS AND WATER

10.1 Hydrology and Hydrogeology

10.1.1 Chapter 10, Soils and Water of the 2020 EIAR established a baseline for the site and assessed in detail the potential for likely significant effects on soil and water receptors resulting from the construction, operation and decommissioning of the 39 Turbine Proposed varied Development. This assessment considers any changes to the significance of impacts as a result of the proposed changes set out in section 2 of this report.

10.1.2 A comprehensive programme of field investigation was undertaken to inform the 2020 EIAR, this remains valid for the 35 Turbine Proposed varied Development.

10.1.3 Removal of turbines T35, T36, T39 and T41 and their associated tracks will result in no change to the effects on hydrology, hydrogeology, nor will it have any effect on the presence or occurrence of Groundwater Dependent Terrestrial Ecosystems (GWDTE), as identified in the 2020 EIAR.

10.1.4 The removal of associated tracks will also reduce the number of watercourse crossings for the development, as watercourse crossing WX14 will no longer be required.

10.1.5 In summary, the proposed 35 Turbine Proposed Varied Development will not change the findings of the 2020 EIAR, which found no residual significant effect on hydrology or hydrogeology.

10.2 Peat

10.2.1 The revised layout does not change the assessment or conclusions submitted as part of the 2020 EIAR[Error! Bookmark not defined.].

10.3 Peat Landslide Hazard and Risk Assessment (PLHRA)

10.3.1 There is no change to the assessment or conclusions submitted as part of the PLHRA. The turbines that have been removed from the design were in areas classed as negligible and low risk of peat instability.

10.4 Peat Management Plan

10.4.1 There is an overall reduction in the volume of peat to be excavated and a balance for re-use of peat remains.

10.5 Aggregate Requirements

10.5.1 The removal of four turbines and associated track reduces the aggregate requirements from on-site borrow pits.

10.6 Carbon Calculator

10.6.1 A revised Carbon Calculator has been submitted for the 35 Turbine Proposed varied Development showing that the removal of four turbines does not alter the overall carbon payback time, Reference Number H823 UAJR 7P81 V.10.

11. SOCIOECONOMICS

11.1 Background

11.1.1 Chapter 11, Socioeconomics of the 2020 EIAR established a baseline for the site and assessed in detail the potential for likely significant effects on socioeconomic receptors resulting from the construction, operation and decommissioning of the 39 Turbine Proposed varied Development. This assessment briefly considers any changes to the significance of impacts as a result of the proposed changes set out in section 2 of this report.

11.1.2 The figures for the 35 Turbine Proposed Varied Development were derived using the same methodology as presented in Chapter 11 of the 2020 EIAR and Table 11.1 below summarises the changes from the 39 Turbine Proposed Varied Development to the 35 Turbine Proposed Varied Development.

Table 1111.1 Magnitude of economic effects new layout comparison

	35 Turbine Proposed Varied Development	**39 Turbine Proposed Varied Development**
Development and Construction		
Economic Impact in Caithness and Sutherland	£2.2 million GVA 34 years of employment	£2.4 million GVA 38 years of employment
Economic Impact in Highland	£26.3 million GVA 384 years of employment	£29.4 million GVA 427 years of employment
Economic Impact in Scotland	£80.7 million GVA 1,212 years of employment	£89.9 million GVA 1,350 years of employment
Operation (annual impacts)		
Economic Impact in Caithness and Sutherland	£1.0 million GVA 15 jobs	£1.2 million GVA 16 jobs
Economic Impact in Highland	£3.5 million GVA 47 jobs	£3.9 million GVA 53 jobs
Economic Impact in Scotland	£6.3 million GVA 91 jobs	£7.0 million GVA 101 jobs
Community Benefit Funding	£490,000	£546,000
Non-Domestic Rates Paid	£2.3 million	£2.5 million

11.1.3 The changes do not affect the significance of the effects. The maximum reduction in magnitude of any impact is 10%. For those impacts which have been assessed as negligible, any reduction in the magnitude of impact will not change that assessment of significance. Those impacts which have been assessed as minor beneficial do not change because the magnitude of impact has not changed considerably. No changes to the conclusions presented in 2020 EIAR are predicted.

12.OTHER ISSUES

12.1.1 No significant changes to other issues as a result of the removal of T35, T36, T39 and T41 are predicted. Full details of impacts identified can be found in Chapter 12: Other issues of the 2020 EIAR.

13.SCHEDULE OF MITIGATION

13.1.1 The Schedule of Mitigation remains unchanged from the 2020 EIAR Chapter 13: Schedule of Mitigation (EIAR Volume 2).

14.SUMMARY

14.1.1 Table 14.1 of the 2020 EIAR presents a summary of the predicted residual significant effects of the 39 Turbine Proposed varied Development. A review of this has been carried out to identify any changes in significance associated with the 35 Turbine Proposed Varied Development. With the exception of impacts associated with aviation lighting, no changes are predicted as a result of the removal of the 4 turbines.

14.1.2 Additional information was submitted in April 2021 presenting the updated predicted significant effects of aviation lighting following approval from the CAA. This assessment has been updated to reflect the revised lighting approval by the CAA and is contained in Appendix 4.2 of this report.