

Chapter 15: Aviation

EXECUTIVE SUMMARY	1
15.1. INTRODUCTION.....	3
15.2. SCOPE OF ASSESSMENT	3
15.3. CONSULTATIONS.....	5
15.4. ASSESSMENT METHODOLOGY	9
15.5. CONSENTED DEVELOPMENT EIAR BASELINE	12
15.6. SUMMARY OF EFFECTS PREDICTED & MITIGATION MEASURES PROPOSED FOR THE CONSENTED DEVELOPMENT.....	13
15.7. REVISED ASSESSMENT OF EFFECTS FOR THE PROPOSED VARIED DEVELOPMENT	13
15.8. REVISED MITIGATION MEASURES FOR THE PROPOSED VARIED DEVELOPMENT	17
15.9. ASSESSMENT OF CUMULATIVE EFFECTS.....	19
15.10. CONCLUSION	20
15.11. REFERENCES.....	22

Tables

TABLE 15.1: CONSULTATION RESPONSES	5
TABLE 15.2: EMBEDDED MITIGATION MEASURES	11

Plates

Plate 15.1: Aviation Study Area and Locations of Aviation Receptors

Technical Appendices

Technical Appendix 15.1: Tangy IV Wind Farm Aviation Lighting Assessment Report (Wind Farm Low Flying Aviation Consultants (WFLFAC) dated 23 April 2026)

Technical Appendix 15.2: Civil Aviation Authority (CAA) Response to Tangy IV Wind Farm Aviation Lighting Assessment Report (CAA dated 5 May 2026)

Technical Appendix 15.3: Tangy IV Wind Farm Instrument Flight Procedure Assessment – Campbeltown and Islay Airports (PildoLabs Limited dated 26 December 2025)

Technical Appendix 15.4: National Air Traffic Services (NATS) Technical and Operational Assessment (TOPA) Report (NATS dated August 2025)

Executive Summary

SSE Generation Limited (hereafter 'the Applicant') is proposing to vary Tangy IV Wind Farm (hereafter 'the Consented Development') to increase the tip height of all 16 turbines to a new maximum blade tip height of up to 200 metres (m) (hereafter 'the Proposed Varied Development').

An assessment has been undertaken of the potential effects on aviation during the construction, operation and decommissioning phases of the Proposed Varied Development.

The methodology utilised for the assessment of the Proposed Varied Development is the same as that presented and used in 2018 EIA Report, **Chapter 18: Aviation** and that outlined in **Chapter 3: Approach to EIA**.

In respect of aviation, the key factor of the Proposed Varied Development is that the wind turbine tip heights will be increased to 200m above ground level ('agl') compared with 149.9m agl tip heights for the Consented Development.

The baseline environment for the Proposed Varied Development remains largely unaltered from the baseline environment outlined in the 2018 EIA Report, **Chapter 18: Aviation** and the 2025 EIA Scoping Report, **Chapter 15: Aviation**. The only change to the baseline environment for the Proposed Varied Development is that the NATS Doppler Very High Frequency Omni-Range ('DVOR') navigation beacon has since been withdrawn from service and decommissioned.

Scoping responses from Highlands and Islands Airports Limited ('HIAL') and National Air Traffic Services ('NATS') confirmed that the Proposed Varied Development would not adversely impact Islay Airport's Instrument Flight Procedures ('IFPs') or the NATS Distance Measuring Equipment ('DME') navigation beacon. Consequently, no assessment of potential impacts on these receptors was required.

An IFP assessment was carried out by PildoLabs to ascertain any potential impacts on Campbeltown Airport's IFPs (including Outer Horizontal Surfaces ('OHS') and Minimum Sector Altitudes ('MSA')). PildoLabs identified a few minor issues for consideration, but HIAL have indicated their willingness to accept the changes recommended in the IFP report which will ultimately require approval from the Civil Aviation Authority ('CAA'). Although potential impact on Campbeltown Airport's OHS was identified, HIAL confirmed that OHS are not currently safeguarded and that CAA's requirement for suitable aviation lighting would provide sufficient mitigation. Campbeltown Airport has two discrete procedures that need to be assessed. At the time of writing, HIAL are awaiting Campbeltown ATC's assessment of potential impact on these

procedures although HIAL has indicated that any impact is highly likely to be resolvable with relatively minor changes to any affected procedures.

The increased turbine tip height means that an additional aviation lighting assessment is required. The assessment, carried out by Wind Farm Low Flying Aviation Consultants ('WFLFAC'), proposed both visible and infra-red aviation lights to be installed on the Proposed Varied Development's wind turbines. The lighting scheme, which has subsequently been approved by CAA, includes installation of five visible lights on turbines T01, T05, T06, T08 and T11 and infra-red aviation lighting is required on all turbines (T01 to T16) which is a change from the Consented Development. Conditions 31 and 32 previously imposed for the Consented Development will also need to be imposed for the Proposed Varied Development. As no lighting scheme was submitted for the Consented Development under Condition 32, the Applicant will submit an **Aviation Safety and Lighting Scheme** to the Planning Authority and relevant consultees for the Proposed Varied Development. HIAL has also been notified of the CAA-approved lighting scheme.

In their scoping response, NATS confirmed that wind turbines T03, T04, T05, T07, T11, T12, T13, T14, T15 and T16 of the Proposed Varied Development would create adverse impacts on the Lowther Hill Air Traffic Control (ATC) radar. The Applicant has commenced discussions with NATS about potential mitigation solutions and it is likely that the proposed solution will be to use Multi-Radar Tracker blanking. The Applicant intends to continue negotiations with NATS with the aim of delivering a suitable ATC radar mitigation solution prior to the operation phase of the Proposed Varied Development. Requirement for this mitigation is a change from the Consented Development.

The impacts to aviation receptors during the construction, operation and decommissioning phases of the Proposed Varied Development has been assessed as **negligible** and therefore, **not significant**, following implementation of the embedded and additional mitigation measures outlined in this chapter.

15.1. Introduction

- 15.1.1. An aviation assessment was previously undertaken for the consented Tangy IV Wind Farm (the 'Consented Development') in 2018 in accordance with best practice guidance. This assessed a layout consisting of 16 turbines with a maximum tip height of 149.9m.
- 15.1.2. This chapter considers the potential for the Proposed Varied Development as described in **Chapter 2: Design Iteration and Description of Proposed Varied Development** to result in material changes to the effects identified for the Consented Development.
- 15.1.3. The assessment is supported **Technical Appendices 15.1 – 15.4** in **Volume 4** of this EIA Report.

15.2. Scope of Assessment

- 15.2.1. The Applicant is proposing to vary the Section 36 ('S.36') consent for Tangy IV Wind Farm (hereafter 'the Consented Development') to increase the tip height of all turbines to a new maximum blade tip height of up to 200 metres (m) (hereafter 'the Proposed Varied Development'). The Proposed Varied Development comprises of:
 - increasing the tip height of the consented turbines;
 - increasing areas of crane hardstanding and foundation requirements for each turbine, some hardstands have been reorientated/repositioned;
 - addition of nine new turning heads; and,
 - the removal of one borrow pit search area, a total of seven borrow pit search areas.
- 15.2.2. This chapter evaluates the effects of the Proposed Varied Development on aviation receptors. The assessment identifies and assesses the likely significant effects with respect to aviation associated with the construction, operation and decommissioning phases of the Proposed Varied Development. Furthermore, when comparing these effects from those of the Consented Development, this chapter highlights these differences particularly in reference to the findings of the aviation assessment provided in the 2018 EIA Report, **Chapter 18: Aviation**. This assessment has also been informed by consultation responses from aviation stakeholders in response to the 2025 Scoping Report which are contained in the 2025 EIA Scoping Opinion (**Technical Appendix 3.2**).

- 15.2.3. The potential effects of wind turbines on aviation are widely publicised, but the primary concern is one of safety. Despite innumerable subtleties in the actual effects, there are three dominant scenarios that lead to potential impacts:
- Physical obstruction: Wind turbines can present a physical obstruction to aircraft;
 - Impacts on aviation radar systems and the provision of radar-based Air Traffic Services ('ATS'): Wind turbines can create unwanted radar clutter which appears on radar displays and can affect the provision of ATS to pilots. Radar clutter (or false radar returns) can make it difficult for air traffic controllers to differentiate between aircraft and those radar returns resulting from the detection of wind turbines. Furthermore, the appearance of multiple false targets in close proximity can generate false aircraft tracks and seduce those returns from 'real' aircraft away from their true positions. It should be noted that impacts on radar systems are only possible if the wind turbine blades are moving, therefore this impact is generally applicable to the operation phase, or at the time of blade tip installation; and
 - Communication, Navigation and Surveillance ('CNS') equipment: A wide range of systems, together with air-ground communications facilities, can be adversely affected by development of infrastructure projects; specifically, when located within the physical safeguarding zones of CNS equipment.
- 15.2.4. The assessment has been carried out by Wing Commander Mike Coleman Royal Air Force ('RAF') (Retd), Director, Coleman Aviation Limited. Mike retired from the RAF in 2012 after 27 years' service. His last appointment was as RAF lead for safeguarding against the impact of wind farms on Ministry of Defence ('MoD') operations. Prior to converting to Air Traffic Control ('ATC'), he completed operational tours as a fast-jet navigator compiling nearly 1000 flying hours on the Tornado GR1. Since leaving the RAF, he has worked for over 10 years resolving wind farm-related aviation issues for developers; including provision of aviation specialist input into Environmental Impact Assessment ('EIA') Reports.

15.3. Consultations

15.3.1. **Table 15.1** provides a summary of aviation stakeholder consultation responses from the 2025 Scoping Report, as contained in the 2025 Scoping Opinion, of the Proposed Varied Development.

Table 15.1: Consultation Responses

Consultee and Date	Consultation Response	Applicant Response
Argyll and Bute Council – Scoping Opinion dated 18 August 2025	The Council understands that advice from relevant consultees with expertise in this field will be sought in this regard. It is also noted that the Applicant has stated that they will consult with all relevant stakeholders in order to identify any effects and, if required, the mitigation options required to alleviate any impact.	The Applicant acknowledges the comments of Argyll and Bute Council. Consultation has been carried out with all relevant aviation stakeholders and details are provided below in this table.
MoD (Defence Infrastructure Organisation ('DIO')) – Scoping Opinion dated 25 July 2025	The principal safeguarding concern of MoD with this development relates to the creation of physical obstructions to air traffic movements. In this case the development falls within Low Flying Area ('LFA') 14, within which fixed wing aircraft may operate as low as 250 feet (ft) or 76.2m above terrain features to conduct low level flight training. The addition of turbines in this location has the potential to introduce a physical obstruction to low flying aircraft operating in the area. To address this impact, and given the location and scale of the development, the MoD would require that conditions are added to any consent issued requiring that the development is fitted with aviation safety lighting and that sufficient data is submitted to ensure that structures can be accurately charted to allow deconfliction. The development proposed includes wind turbine	The Applicant accepts that MoD accredited aviation lighting will be required and has commissioned an aviation lighting report from WFLFAC which can be found at Technical Appendix 15.1 . CAA has since approved the reduced lighting scheme (Technical Appendix 15.2). Potential effects on low flying aircraft are discussed further in Sections 15.7 and 15.8 .

Consultee and Date	Consultation Response	Applicant Response
	generators that exceed a height of 150m above ground level ('agl') and are therefore subject to the lighting requirements set out in the Air Navigation Order 2016. In addition to any CAA requirements, MoD would require the submission, approval, and implementation of an aviation safety lighting specification that details the installation of MoD accredited aviation safety lighting. As a minimum MoD would require that perimeter turbines are fitted with infra-red lighting.	
Glasgow International Airport – Scoping Opinion dated 23 July 2025	This proposal is located outwith the consultation area for Glasgow International Airport. We therefore have no comment to make and need not be consulted further.	The Applicant accepts Glasgow International Airport's comments. As a result, potential effects on Glasgow International Airport operations are scoped out of this EIA Report and are not discussed further in this chapter.
Glasgow Prestwick Airport – Scoping Opinion dated 22 July 2025	The proposed development remains substantially terrain shielded from the primary surveillance radar at the airport and is well clear of all Instrument Flight Procedures ('IFPs') and associated protected surfaces. Consequently, we have no further comment or valid objection to make to the proposal.	The Applicant accepts Glasgow Prestwick Airport's comments. As a result, potential effects on Glasgow Prestwick Airport operations are scoped out of this EIA Report and are not discussed further in this chapter.
Highlands and Islands Airports Limited (HIAL) – Scoping Opinion dated 6 August 2025	HIAL has been consulted on the proposed development and our preliminary assessment shows that this development may impact the safeguarding criteria and operation of Campbeltown Airport. HIAL request that an Aviation Impact Feasibility Study ('AIFS') of the proposed development, is undertaken to understand any impact on the infrastructure and	The Applicant acknowledges the comments of HIAL and has since commissioned an IFP assessment to be carried out by PildoLabs Limited who are a CAA Approved Procedure Design Organisation ('APDO'). PildoLabs' IFP assessment report can be found in Technical Appendix 15.3 . Further correspondence with HIAL on this

Consultee and Date	Consultation Response	Applicant Response
	operation of Campbeltown Airport. The following are required to be assessed by the applicant: 1. IFPs; and 2. Aviation lighting requirements. It should be noted that HIAL would work with the developer towards a resolution. However, HIAL currently submit a holding objection until the AIFS has been submitted to and reviewed by HIAL.	issue is covered below in this table. Likely significant environmental effects on Campbeltown Airport's IFPs are assessed in Sections 15.7 and 15.8. The Applicant also accepts that CAA and MoD accredited aviation lighting will be required and has commissioned an aviation lighting report from WFLFAC which can be found at Technical Appendix 15.1. CAA has since approved the reduced lighting scheme (Technical Appendix 15.2) and this has since forwarded to HIAL. Potential effects on Campbeltown Airport operations are discussed further in Sections 15.7 and 15.8.
Meteorological (Met) Office – Scoping Opinion dated 24 July 2025	The proposal would be approximately 47 kilometres (km) from our nearest weather radar. There is potential that the wind turbines would be detected by the weather radar and have an impact on the data received. However, the proposal is outside any of our standard 20km consultation zones, and we would be able to manage any impacts on products and services derived from the weather radar data. Therefore, we have no concerns and don't need to be consulted further.	The Applicant accepts the Met Office's comments. As a result, potential effects on Met Office operations are scoped out of this EIA Report and are not discussed further in this chapter.
National Air Traffic Services (NATS) – Scoping Opinion dated 5 August 2025	The proposed development has been examined by our technical safeguarding teams. In the timeframe given to us we have been unable to thoroughly investigate the effects of the proposed development on our operations however the relevant	The Applicant engaged with NATS by email on 5 April 2026 to ascertain any potential effect the Proposed Varied Development could have on NATS ATC operations. Further details of this

Consultee and Date	Consultation Response	Applicant Response
	teams are being consulted. Based on our preliminary technical findings, the proposed development does conflict with our safeguarding criteria. Accordingly, NATS objects to the proposal. We will notify you within 4-6 weeks of the results of our operational assessment. Only if this assessment shows the impact to be acceptable will we be able to withdraw our objection.	correspondence are contained below in this table.
NatureScot – Scoping Opinion dated 8 September 2025	We consider that significant adverse landscape and visual effects on receptors previously identified in our response to Tangy IV could extend into significant night-time effects resulting from visible aviation lighting on the proposed turbines. The proposal may result in significant adverse individual and cumulative night-time effects resulting from visible aviation lighting on some of the special landscape qualities of the North Arran National Scenic Area. The lighting assessment should be carried out with reference to our co-authored Guidance on Aviation Lighting Impact Assessment.	The Applicant accepts that significant adverse landscape and visual effects could extend into significant night-time effects resulting from visible aviation lighting. As a result, the Applicant has commissioned an aviation lighting report from WFLFAC in order to reduce the amount of visible lights that will be required to satisfy aviation stakeholders. The lighting assessment report can be found at Technical Appendix 15.1. CAA has since approved the reduced lighting scheme (Technical Appendix 15.2). Any adverse landscape and visual effects resulting from visible aviation lighting are assessment in Chapter 5: Landscape and Visual.
HIAL – Pre-application consultation dated 2 February 2026	The Applicant forwarded the PildoLabs IFP assessment report to HIAL for their review. HIAL responded by email on 16 February 2026 confirming that, from their initial analysis, the changes recommended by PildoLabs would usually be acceptable (subject to CAA approval). However, HIAL pointed	At the time of writing HIAL are still awaiting Campbeltown ATC team's assessment of the two discrete procedures. However, HIAL have indicated that any impact is highly likely to be resolvable. Potential effects on Campbeltown Airport operations are discussed further in Sections 15.7 and 15.8.

Consultee and Date	Consultation Response	Applicant Response
	out that Campbeltown Airport also has two discrete procedures that will need to be assessed. The IFP report has since been sent to the airport for review and assessment by the ATC team. Regarding the Outer Horizontal Surfaces, whilst one is present this is currently not safeguarded against. The required aeronautical lighting would provide sufficient mitigation.	
NATS – Pre-application consultation response dated 9 April 2026	NATS responded to the Applicant's email of 5 April 2026 requesting confirmation of the potential effects the Proposed Varied Development on NATS ATC operations. The NATS Safeguarding Team confirmed that a TOPA had been completed and resulted in an objection due to adverse impact on the Lowther Hill ATC PSR. The TOPA report also indicated that there would be no impact on any other NATS ATC radars (e.g. Tiree) or navigation aids (such as the Distance Measuring Equipment ('DME') beacon located close to Campbeltown Airport).	Potential effects on NATS ATC operations are discussed further in Sections 15.7 and 15.8.

15.4. Assessment Methodology

- 15.4.1. The methodology utilised for the assessment of the Proposed Varied Development is the same as that presented and used in 2018 EIA Report, Chapter 18: Aviation and that outlined in Chapter 3: Approach to EIA. As a result, the methodology has not been restated in this chapter.

Study Area

- 15.4.2. To assess the impact on aviation, a study area has been devised that takes into account the immediate vicinity of the Proposed Varied Development, the consultation criteria for aviation assets as described in CAP 764 (Policy and

Guidelines on Wind Turbines) (CAA, 2016) and a wider study area determined by the range of potentially affected radar systems; both ATC and AD radar systems. A pictorial representation of the site location and potential aviation receptors (airports and radar locations) is depicted on an aviation chart and shown at **Plate 15.1**.

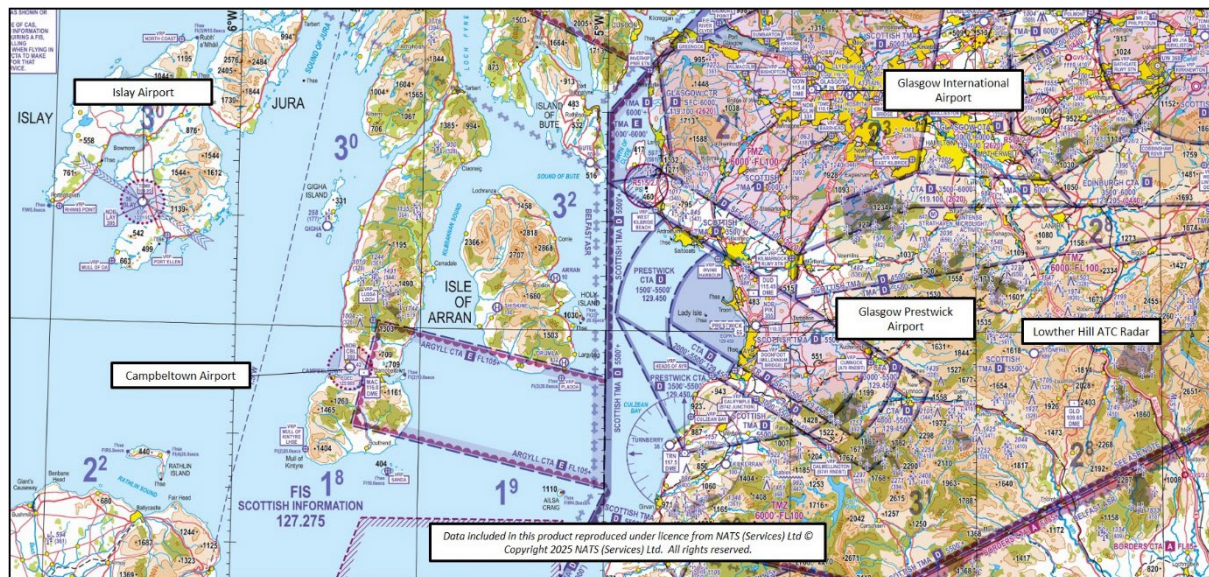


Plate 15.1: Aviation Study Area and Locations of Potential Receptors

Site-Specific Surveys

- 15.4.3. In order to ascertain the exact aviation lighting requirements for the Proposed Varied Development, the Applicant commissioned an aviation lighting assessment from WFLFAC. The assessment proposed the visible and infra-red aviation lights to be installed on the Proposed Varied Development's wind turbines. The WFLFAC report, which can be found at **Technical Appendix 15.1**, has since been accepted and approved by the CAA. The CAA approval letter can be found at **Technical Appendix 15.2**.
- 15.4.4. The Applicant also commissioned an IFP assessment from PildoLabs Limited, a CAA APDO, to assess the impact of the Proposed Varied Development on HIAL's Campbeltown and Islay Airports' IFPs. The IFP assessment determined that the Proposed Development would not adversely affect Islay Airport's IFPs; consequently, this aspect is not discussed further in this chapter. The report can be found at **Technical Appendix 15.4** and the impact on Campbeltown Airport is assessed in **Sections 15.7** and **15.8**.
- 15.4.5. No other site-specific surveys have been undertaken to inform this assessment. This is because the baseline characterisation developed through

existing data sources, coupled with ongoing consultation with relevant stakeholders is considered sufficient to inform the aviation chapter.

Limitations and Assumptions

- 15.4.6. The CAA and MAA data used in this chapter, as detailed previously in 2018 EIA Report, **Chapter 18: Aviation**, are the most up to date publicly available information which can be obtained from the applicable data sources as cited. Data has also been provided through studies and consultation as detailed in **Table 15.1**. It is considered that the data employed in the assessment are robust and sufficient for the purposes of the impact assessment presented.

Embedded Mitigation Measures

- 15.4.7. As part of the project design process for the Proposed Varied Development, a number of best practice and designed-in mitigation measures (referred to collectively as embedded mitigation) are either present or will be included to reduce the potential for effects relating to aviation. Current embedded mitigation measures relevant to aviation are described in **Table 15.2** as follows:

Table 15.2: Embedded Mitigation Measures

Embedded Mitigation Measures	Justification
Approval and implementation of a Lighting Plan ('LP'), which will set out specific requirements in terms of aviation lighting to be installed on the wind turbines, as required under CAA (2016). CAP 393, Air Navigation: The Order and the Regulations 2016.	An LP will be prepared in consultation with CAA and MoD and will take into account requirements for aviation lighting as specified in Article 222 of the UK ANO, 2016 and changes to International Civil Aviation Organisation Annex 14 Volume 2, Chapter 6, Paragraph 6.2.4 promulgated in November 2016. The production of an LP will be a condition of any planning consent. Measures will be adopted to ensure that the potential for risk of aircraft collision with the Proposed Development's infrastructure is minimised.
All structures of more than 91.4m in height will be charted on aeronautical charts and reported to the Defence Geographic Centre, which maintains the UK's database of tall structures (Digital Vertical Obstruction File) at least ten weeks prior to construction.	Aeronautical charting requirements will be a condition of any planning consent. Measures will be adopted to ensure that the potential for risk of aircraft collision with the Proposed Development's infrastructure is minimised.

Embedded Mitigation Measures	Justification
Any temporary obstacles associated with wind farms which are of more than 91.4m in height are to be alerted to aircrews by means of the Notice to Aviation ('NOTAM') system.	Consultation with the CAA will be required to ensure that temporary obstacles of more than 91.4m are identified to aircrews by NOTAM. Notification of temporary obstacles would be a condition of the planning consent. Measures will be adopted to ensure that the potential for risk of aircraft collision with the Proposed Development's infrastructure is minimised.
CAA will be informed of the locations, heights and lighting status of the wind turbines including estimated and actual dates of construction and the maximum heights of any construction equipment to be used, prior to the start of construction.	Consultation with the CAA will be required. Inclusion of locations, heights and lighting status of the wind turbines on aviation charts and in the UK IAIP would be a condition of the planning consent. Measures will be adopted to ensure that the potential for risk of aircraft collision with the Proposed Development's infrastructure is minimised.

- 15.4.8. The embedded mitigation measures outlined in **Table 15.2** will need to be implemented prior to the construction phase of the Proposed Varied Development to ensure that any potential effects caused by the presence of obstacles (e.g. cranes and stationary wind turbines) are mitigated successfully.
- 15.4.9. If any changes are required to civil airport IFPs (such as Campbeltown), these procedures will need to be amended and re-published in appropriate aviation documentation ahead of the construction phase of the Proposed Varied Development.
- 15.4.10. In addition, if adverse effects on radar systems are identified, these effects will need to be mitigated ahead of the operational phase of the Proposed Varied Development as any impacts are only possible once the wind turbine blades are moving.

15.5. Consented Development EIAR Baseline

- 15.5.1. The Aviation baseline environment remains as described in the 2018 EIA Report, **Chapter 18: Aviation** for the Consented Development. However, the Proposed Varied Development seeks to modify the Consented Development

by increasing the maximum tip height of the turbines from 149.9 metres (m) up to 200m.

15.6. Summary of Effects Predicted & Mitigation Measures proposed for the Consented Development

- 15.6.1. The predicted levels of impacts identified in the 2018 EIA Report, **Chapter 18: Aviation** were as follows:
- Potential adverse effects on Campbeltown Aerodrome's IFPs (including Outer Horizontal Surfaces ('OHS') and Minimum Sector Altitudes ('MSA'));
 - Potential adverse effects on NATS Lowther Hill ATC radar;
 - Potential adverse effects on NATS Tiree ATC radar;
 - Potential adverse effects on NATS Doppler Very High Frequency Omni-Range ('DVOR') and DME navigation beacons; and
 - Potential to present an obstruction hazard to military low flying aircraft.
- 15.6.2. The overall assessment identified that there would only be **minor** impacts on any of the aviation receptors and that these impacts were **not significant**; consequently, no embedded, or additional, mitigation measures were put forward.
- 15.6.3. However, aviation-related planning conditions (Conditions 31 and 32) were applied to the deemed planning consent for the Consented Development, and it is anticipated that, should planning consent be awarded for the Proposed Varied Development, these planning conditions will also be required.

15.7. Revised Assessment of Effects for the Proposed Varied Development

Baseline

- 15.7.1. The baseline environment for the Proposed Varied Development remains largely unaltered from the baseline environment outlined in the 2018 EIA Report, **Chapter 18: Aviation** and the 2025 EIA Scoping Report, **Section 15: Aviation**. The only change to the baseline environment for the Proposed Varied Development is that the NATS DVOR navigation beacon has since been withdrawn from service and decommissioned. Consequently, no assessment of potential impacts on this navigation beacon is required. The DME navigation beacon, that was co-located with the DVOR beacon, remains

in service and continues to form part of the assessment for the Proposed Varied Development.

Future Baseline

- 15.7.2. An assessment of the future baseline conditions has been carried out assuming that the Proposed Varied Development does not come forward. There are no anticipated future changes to the airspace and aviation environment in the vicinity of the Proposed Varied Development that affect this assessment.

Desk-top Assessment

- 15.7.3. As a result of the desk-top review, coupled with the aviation assessment carried out in the 2018 EIA Report, the IFP assessment report carried out by PildoLabs Limited (**Technical Appendix 15.3**), aviation stakeholder consultation responses to the 2025 EIA Scoping Report and subsequent consultation with CAA/HIAL, it was possible to identify which aviation receptors were likely to be affected by the Proposed Varied Development. As a result, the following potential impacts were scoped into the EIA Report:
- Potential adverse effects on Campbeltown Aerodrome's IFPs (including OHS and MSA);
 - Potential adverse effects on NATS Lowther Hill ATC radar;
 - Potential adverse effects on NATS Tiree ATC radar;
 - Potential adverse effects on NATS DME navigation beacon; and
 - Potential to present an obstruction hazard to military low flying aircraft.
- 15.7.4. Adverse effects on radar systems are only possible if the wind turbine blades are moving, therefore this impact is applicable to the operation phase only.

Revised Assessment of Effects

Construction

Campbeltown Airport's IFPs (including OHS and MSA)

- 15.7.5. The IFP assessment (**Technical Appendix 15.3**) assessed the potential impact of the Proposed Varied Development on Campbeltown and Islay Airports' IFPs (which included airport OHS and MSA). The results confirmed that Islay Airport's IFPs would not be affected by the Proposed Varied

Development but that Campbeltown Airport's IFPs, or aspects of IFPs, would be impacted as follows:

- The proposed wind turbines will penetrate the Campbeltown OHS (if in place). This is not necessarily an issue, but PildoLabs recommended that HIAL would need to confirm whether these new obstacles would affect the airport's procedures; and
- The proposed wind turbines will require an increase in Campbeltown's circling minima for Category C & D aircraft to 1,790 ft for both its instrument approaches. This increase in the circling minima may not have an operational impact but would need to be discussed with HIAL.

15.7.6. Also, in their response to the 2025 EIA Scoping Report, HIAL requested that the Applicant carry out an aviation lighting assessment. This was commissioned from WFLFAC and can be found at **Technical Appendix 15.1**. Further details of the wind turbine lighting requirements are contained in **Paragraph 15.8.5** below. CAA has since approved the reduced lighting scheme (**Technical Appendix 15.2**) and this addresses HIAL's concerns regarding aviation. HIAL has since been notified of the CAA-approved lighting scheme.

15.7.7. As a result of this assessment, it was considered that aviation safety may be compromised in the absence of suitable mitigation measures. Consequently, as there might be adverse effects on Campbeltown Airport's IFPs, the magnitude of these effects was assessed as **high** and the significance of the effect was assessed as **major**.

NATS DME Navigation Beacon

15.7.8. The NATS DME navigation beacon is located approximately 1.5 nautical miles (2.8 kilometres) to the southeast of Campbeltown Airport. NATS, who are responsible for operating and maintaining the beacon, carried out an assessment of potential impacts on their infrastructure ahead in response to the 2025 EIA Scoping Report. In their TOPA report (**Technical Appendix 15.4**), NATS confirmed that no impact is anticipated from the Proposed Varied Development on any NATS navigation aids. Consequently, as there would be no effects on the NATS DME navigation beacon, the magnitude of effect is **negligible** and the significance of the effect is **negligible**.

Low Flying Aircraft

15.7.9. Regarding the potential to present an obstruction hazard to low flying aircraft, the Proposed Varied Development's wind turbines now exceed a height of 150m agl and are therefore subject to the lighting requirements set out in the Air Navigation Order 2016. In addition to any CAA requirements, MoD would

require the submission, approval, and implementation of an aviation safety lighting specification that details the installation of MoD accredited aviation safety lighting. As a result, the Applicant commissioned an aviation lighting assessment from WFLFAC to ascertain the exact aviation lighting requirements for the Proposed Varied Development. The assessment proposed both visible and infra-red aviation lights to be installed on the Proposed Varied Development's wind turbines. The WFLFAC report, which can be found at **Technical Appendix 15.1**, has since been accepted and approved by the CAA. The CAA approval letter can be found at **Technical Appendix 15.2**.

- 15.7.10. Overall, following implementation of the agreed aviation lighting scheme outlined above, the magnitude of the effect of the Proposed Varied Development on low flying aircraft is **low** and the significance of the effect is **negligible**.

Operation

Potential adverse effects on NATS Lowther Hill ATC radar;

- 15.7.11. In their response to the 2025 EIA Scoping Report, NATS confirmed that wind turbines T03, T04, T05, T07, T11, T12, T13, T14, T15 and T16 of the Proposed Varied Development would create adverse impacts on the Lowther Hill ATC radar. Specifically, it was determined that the terrain screening available will not adequately attenuate the radar signal to some of the turbines, and therefore these turbines are likely to cause false primary plots to be generated on air traffic controllers' radar displays. Equally, a reduction in the radar's probability of detection, for real aircraft, is anticipated.
- 15.7.12. Consequently, as there might be adverse impacts on the NATS Lowther Hill ATC radar, the magnitude of effect is assessed as **high** and the significance of the effect is **major**.

Potential adverse effects on NATS Tiree ATC radar;

- 15.7.13. In their response to the 2025 EIA Scoping Report, NATS confirmed that the Proposed Varied Development's wind turbines would not adversely impact the Tiree ATC radar. Consequently, as there would be no effects on the NATS Tiree ATC radar, the magnitude of effect is **negligible** and the significance of the effect is **negligible**.

Decommissioning

- 15.7.14. No effects on aviation are expected during the decommissioning phase further to those effects identified in relation to the construction and operation phases. Consequently, prior to mitigation measures being introduced, the overall magnitude of the effect of the Proposed Varied Development on aviation during the decommissioning phase is found to be **high** and the significance of the effect is found to be **major**.

15.8. Revised Mitigation Measures for the Proposed Varied Development

Construction

Campbeltown Airport's IFPs (including OHS and MSA)

- 15.8.1. Since receiving HIAL's response to the 2025 EIA Scoping Report (see **Table 15.1**), the Applicant forwarded the PildoLabs IFP assessment report (**Technical Appendix 15.3**) to HIAL for their review. HIAL responded by email on 16 February 2026 confirming that, from their initial analysis, the changes recommended by PildoLabs would generally be acceptable (subject to CAA approval). HIAL further pointed out that Campbeltown Airport has two discrete procedures that would also need to be assessed. These procedures were as follows:
- Direct Arrival, NDB(L)/DME, RWY 11; and
 - NDB(L)/DME, RWY 11.
- 15.8.2. At the time of writing this chapter, HIAL are still awaiting the Campbeltown ATC team's assessment of potential impact on these two discrete procedures. However, HIAL have indicated that any impact is highly likely to be resolvable by implementing relatively minor changes to any affected procedures. Requirement for this mitigation is a change from the Consented Development.
- 15.8.3. Regarding potential impact on Campbeltown Airport's OHS, HIAL confirmed that whilst one is present, OHS are not currently safeguarded against and that CAA's requirement for suitable aviation lighting would provide sufficient mitigation.
- 15.8.4. Overall, following implementation of the agreed IFP changes and CAA-approved aviation lighting scheme (see **Paragraph 15.8.5** below), the magnitude of the effect of the Proposed Varied Development on Campbeltown Airport's IFPs (including OHS and MSA) is **low** and the significance of the effect is **negligible**.

Low Flying Aircraft

- 15.8.5. The approved lighting scheme for the Proposed Varied Development includes installation of 2000 candela visible lights on turbines T01, T06, T08 and T11, 200 candela visible lights on T05 and infra-red aviation lighting is required on all turbines (T01 to T16); these lighting requirements are a change from the Consented Development. Infra-red lighting will only be visible to aircrews using night vision detection equipment and will not be visible to the naked eye. The visible aviation lighting is capable of being dimmed in accordance with prevailing meteorological visibility conditions as described further in **Technical Appendix 15.1**. For approximately 98% of the time, the visible lights will operate at a reduced intensity of 200 candela, with the higher 2000 candela intensity required only in periods of reduced visibility. Further detail on the visual impact of the turbine lighting is provided in **Chapter 5: Landscape and Visual**.
- 15.8.6. This impact will also require, as further mitigation, the promulgation of data on the locations and heights of the wind turbines on aeronautical charts and in aviation information publications as described for the Consented Development. Planning Conditions 31 and 32 were applied to the Consented Development's Section 36 consent and, as outlined in **Paragraph 15.6.3**, are anticipated to be attached to any consent granted for the Proposed Varied Development. While information has already been submitted to Argyll and Bute Council and relevant consultees in relation to Condition 31, the turbine details have changed and updated information will therefore be submitted by the Applicant if consent is granted. No lighting scheme was submitted under Condition 32, as the project did not progress to the turbine construction stage. Consequently, should consent be granted for the Proposed Varied Development, the Applicant will submit an **Aviation Safety and Lighting Scheme** to the Planning Authority and relevant consultees.
- 15.8.7. Overall, following implementation of the mitigation measures outlined above, the magnitude of the effect of the Proposed Varied Development on low flying aircraft during the construction phase is **low** and the significance of the effect is **negligible**.

Operation

Potential adverse effects on NATS Lowther Hill ATC radar

- 15.8.8. NATS has proven processes and techniques to mitigate the adverse impact of wind turbines on their ATC radars. The Applicant has commenced discussions with NATS about potential mitigation solutions and it is likely that the proposed solution will be to use Multi-Radar Tracker blanking, which is a technical mitigation solution routinely offered by NATS that removes wind turbine returns from the ATC radar display. The Applicant intends to continue

negotiations with NATS with the aim of delivering a suitable ATC radar mitigation solution prior to the operation phase of the Proposed Varied Development. Requirement for this mitigation is a change from the Consented Development.

- 15.8.9. Following implementation of the mitigation measures outlined above, the magnitude of the effect of the Proposed Varied Development on the NATS Lowther Hill ATC radar during the operation phase is low and the significance of the effect is negligible.

Decommissioning

- 15.8.10. No effects on aviation are expected during the decommissioning phase further to those effects identified in relation to the construction and operation phases. Consequently, the overall magnitude of the effect of the Proposed Varied Development on aviation during the decommissioning phase is found to be **low** and the significance of the effect is found to be **negligible**.

15.9. Assessment of Cumulative Effects

- 15.9.1. In terms of cumulative impact, any potential impact on an aviation receptor is generally treated as a standalone effect. Whilst other wind turbine developments may be located in close proximity, the effect on each receptor is considered on a case-by-case basis and any significant effect is sufficient to trigger an objection from the relevant aviation stakeholder. Although mitigation may have been agreed for other developments, it would still be necessary for negotiations and discussions with aviation stakeholders to be carried out under separate arrangement. As such, no specific cumulative effects on aviation stakeholders/receptors are expected. Consequently, the overall cumulative effect of the Proposed Varied Development on aviation is of **low** magnitude and the significance of the effect is **negligible**.
- 15.9.2. As set out in Chapter 2 of this EIA Report, the Proposed Varied Development and the SSEN Transmission Shared Use Connection (the "Shared Use Connection") may be viewed as functionally interdependent for the purposes of the EIA. The Shared Use Connection comprises a 5.6km underground cable from the Tangy IV substation to a terminal tower at Collusca Water, a 13km 132kV overhead line ('OHL') on L7 steel lattice towers averaging 30.4m in height, and a 0.6km underground cable into Carradale Grid Supply Point. The Shared Use Connection is the subject of a separate Section 37 application by SSEN Transmission and is required to enable the Proposed Varied Development (and the proposed Cnoc Buidhe Wind Farm) to connect to the transmission network at Carradale.

- 15.9.3. In preparing the EIA for the Shared Use Connection, SSEN Transmission proposed that aviation assessment be scoped out of the EIA Report. This reflected the fact that the towers, with an average height of approximately 30.4 m, are below the thresholds at which aviation safety or aviation lighting considerations are typically engaged and, as static structures, are unlikely to interfere with radar or navigational systems associated with nearby airports and airfields. Aviation was not subsequently scoped back into the assessment by Scottish Ministers or consultees through the Shared Use Connection Scoping Opinion issued in June 2025.
- 15.9.4. Given that the Shared Use Connection structures are below the height thresholds at which aviation safety or aviation lighting requirements are triggered, there appears to be no means by which the Shared Use Connection could influence the aviation assessment undertaken for the Proposed Varied Development in this chapter. The aviation effects of the Proposed Varied Development, including cumulative aviation lighting effects with other wind energy developments in the area, have therefore been assessed on a site-specific basis above and are not anticipated to be materially affected by the presence or absence of the Shared Use Connection.

15.10. Conclusion

- 15.10.1. This chapter highlights the differences between the findings of the aviation assessment provided in the 2018 EIA Report, **Chapter 15: Aviation** and the assessment carried out for the Proposed Varied Development. This assessment has also been informed by consultation responses from aviation stakeholders in response to the 2025 Scoping Report which are contained in the 2025 EIA Scoping Opinion.
- 15.10.2. Scoping responses from HIAL and NATS confirmed that the Proposed Varied Development would not adversely impact Islay Airport's IFPs or the NATS DME navigation beacon. Equally, the NATS DVOR navigation beacon highlighted as a potential issue for the Consented Development has since been withdrawn from service and decommissioned. Consequently, no assessment of potential impacts on these receptors was required.
- 15.10.3. An IFP assessment was carried out by PildoLabs to ascertain any potential impacts on Campbeltown Airport's IFPs (including OHS and MSA). PildoLabs identified a few minor issues for consideration, but HIAL have since confirmed their willingness to accept the changes recommended in the IFP report which will ultimately require approval from the CAA. Although potential impact on Campbeltown Airport's OHS was identified, HIAL confirmed that OHS are not currently safeguarded and that CAA's requirement for suitable aviation lighting would provide sufficient mitigation. Campbeltown Airport has two discrete procedures that need to be assessed. At the time of writing, HIAL are awaiting Campbeltown ATC's assessment of potential impact on these procedures

although HIAL has indicated that any impact is highly likely to be resolvable with relatively minor changes to any affected procedures.

- 15.10.4. The increased turbine tips heights of the Proposed Varied Development up to 200m compared with 149.9m for the Consented Development meant that an additional aviation lighting assessment was required. The assessment, carried out by WFLFAC, proposed both visible and infra-red aviation lights to be installed on the Proposed Varied Development's wind turbines. The lighting scheme, which has subsequently been approved by CAA, includes installation of five visible lights on turbines T01, T05, T06, T08 and T11 and infra-red aviation lighting is required on all turbines (T01 to T16) which is a change from the Consented Development. Conditions 31 and 32 previously imposed for the Consented Development will also need to be imposed for the Proposed Varied Development. As no lighting scheme was submitted for the Consented Development under Condition 32, the Applicant will submit an **Aviation Safety and Lighting Scheme** to the Planning Authority and relevant consultees for the Proposed Varied Development. HIAL has also been notified of the CAA-approved lighting scheme.
- 15.10.5. In their scoping response, NATS confirmed that wind turbines T03, T04, T05, T07, T11, T12, T13, T14, T15 and T16 of the Proposed Varied Development would create adverse impacts on the Lowther Hill ATC radar. The Applicant has commenced discussions with NATS about potential mitigation solutions and it is likely that the proposed solution will be to use Multi-Radar Tracker blanking. The Applicant intends to continue negotiations with NATS with the aim of delivering a suitable ATC radar mitigation solution prior to the operation phase of the Proposed Varied Development. Requirement for this mitigation is a change from the Consented Development.
- 15.10.6. The impacts to aviation receptors during the construction, operation and decommissioning phases of the Proposed Varied Development has been assessed as **negligible** and therefore, **not significant**, following implementation of the embedded and additional mitigation measures outlined in this chapter.

15.11. References

CAA (2021a). CAP 393, Air Navigation: The Order and the Regulations (2016). Available at: <https://www.legislation.gov.uk/ukxi/2016/765/contents/made>. Accessed on: 3 April 2026.

CAA (2019). CAP 670, Air Traffic Services Safety Requirements (Issue 3, 7 June 2019). Available at: <https://www.caa.co.uk/publication/download/17362>. Accessed on: 3 April 2026.

CAA (2016). CAP 764 - CAA Policy and Guidelines on Wind Turbines (Version 6, February 2016). Available at: <https://www.caa.co.uk/publication/download/14561>. Accessed on: 3 April 2026.

CAA (2021b). CAP 774 - The UK Flight Information Services (Version 4, 15 December 2021). Available at: <https://www.caa.co.uk/publication/download/19298>. Accessed on: 3 April 2026.

MAA (2024). MAA Regulatory Publication 3000 Series: Air Traffic Management Regulations (15 April 2024). Available at: <https://www.gov.uk/government/collections/3000-series-air-traffic-management-regulations-atm>. Accessed on: 3 April 2026.

MAA (2019). Manual of Military Air Traffic Management (30 September 2019). Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/835083/MMATM_Issue_12.pdf. Accessed on: 3 April 2026.

CAA (2026a). CAP 032 - UK Integrated Aeronautical Information Package (2026). Available at: <https://www.aurora.nats.co.uk/htmlAIP/Publications/2021-11-04-AIRAC/html/index-en-GB.html>. Accessed on: 3 April 2026.

CAA (2026b). Visual Flight Rules Chart (CAA, 2026). Available at: <https://nats-uk.ead-it.com/cms-nats/opencms/en/Charts/vfr-charts/>. Accessed on: 3 April 2026.

MoD (2020). Obstruction Lighting Guidance (1 January 2020). Available at: <https://www.contarnex.com/infrared-obstruction-lighting/MOD%20Obstruction%20Lighting%20Guidance%202020.pdf>. Accessed on: 3 April 2026.

NatureScot (2024). Guidance on Aviation Lighting Impact Assessment. Available at: Guidance on Aviation Lighting Impact Assessment | NatureScot. Accessed on: 3 April 2026.

NATS (2026). NATS Self-Assessment Maps (2026). Available at: <https://www.nats.aero/services-products/services/wind-farms/n/wind-farms-self-assessment-maps/>. Accessed on: 3 April 2026.

MoD (2026). UK Military Aeronautical Information Publication (2026). Available at: <https://www.aidu.mod.uk/aip/aipVolumes.html>. Accessed on: 3 April 2026.

Scottish Government (2014). Scottish Planning Policy. Available at: <https://www.gov.scot/publications/scottish-planning-policy/pages/2/>. Accessed on: 3 April 2026.