Environmental Impact Assessment Report

Teindland Wind Farm

Volume 3

TA A13.2: The Cyrrus IFP Assessment

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IFP Safeguarding

Teindland Wind Farm

Inverness Airport

29 April 2025

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Change History Record

Issue	Change Reference	Date	Details
V1.0	Initial Issue	11 November 2024	First Issue
V1.1	Updated Wind Turbine coordinates	29 April 2025	Second Issue

Executive Summary

Teindland Wind Farm Ltd (the Client), has requested Cyrrus to conduct an Instrument Flight Procedure (IFP) safeguarding assessment against a proposed wind farm, to be constructed approximately 27 Nautical Miles (NM) east of Inverness Airport's Aerodrome Reference Point (ARP).

The purpose of this assessment is to determine if the twelve wind turbines infringe upon the protection areas/surfaces of the IFPs serving the Airport. These protection areas and surfaces (sloping or level) are established based upon the runway (RWY) and thresholds, ARP, clearways, ground navigation equipment, and established waypoints.

The assessment has determined that the proposed wind farm does not impact the currently published IFPs for Inverness Airport.

Details of the safeguarding activity and findings are contained within the body of the report.

Overview

The proposed wind farm comprises the installation of 12 wind turbines located approximately 27.00 NM east of Inverness Airport's ARP as indicated in Figure 1.

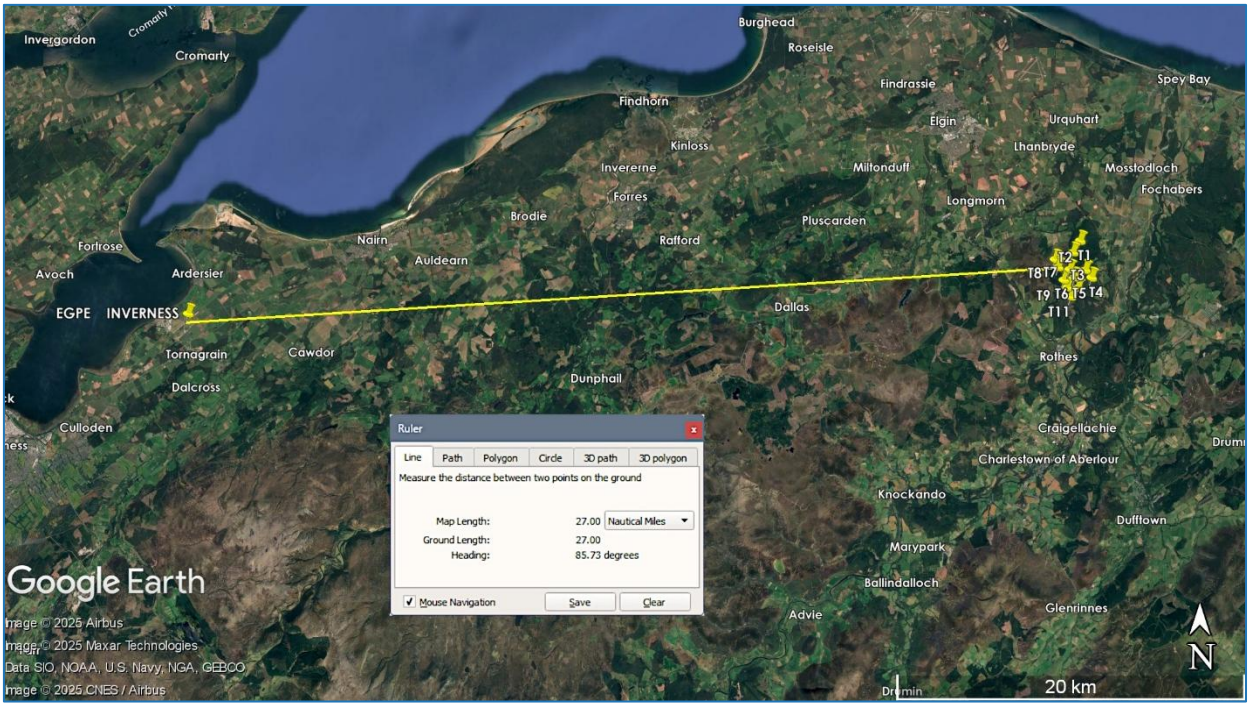

Figure 1: Wind farm relative to ARP

IFP's Assessed

The following IFPs, as published in the UK Aeronautical Information Publication (AIP) were assessed.

- ATC SURVEILLANCE MINIMUM ALTITUDE CHART
- INSTRUMENT APPROACH ILS/DME/VOR RWY 05 (CAT A,B)
- INSTRUMENT APPROACH ILS/DME/VOR RWY 05 (CAT C)
- INSTRUMENT APPROACH LOC/DME/VOR RWY 05 (CAT A,B)
- INSTRUMENT APPROACH LOC/DME/VOR RWY 05 (CAT C)
- INSTRUMENT APPROACH VOR/DME RWY 05 (CAT A, B)
- INSTRUMENT APPROACH VOR/DME RWY 05 (CAT C)
- INSTRUMENT APPROACH DIRECT ARRIVALS ILS/LOC/DME RWY 05 (CAT A,B)
- INSTRUMENT APPROACH DIRECT ARRIVALS ILS/LOC/DME RWY 05 (CAT C)
- INSTRUMENT APPROACH DIRECT ARRIVALS VOR/DME RWY 05 (CAT A,B)
- INSTRUMENT APPROACH DIRECT ARRIVALS VOR/DME RWY 05 (CAT C)
- INSTRUMENT APPROACH ILS/DME/VOR RWY 23 (CAT A,B,C)
- INSTRUMENT APPROACH LOC/DME/VOR RWY 23 (CAT A,B,C)
- INSTRUMENT APPROACH VOR/DME RWY 23 (CAT A,B,C)
- INSTRUMENT APPROACH VOR RWY 23 (CAT A,B,C)
- INSTRUMENT APPROACH DIRECT ARRIVALS ILS/LOC/DME RWY 23 (CAT A,B)
- INSTRUMENT APPROACH DIRECT ARRIVALS VOR/DME RWY 23 (CAT A,B)

The proposed *RNAV* Approach procedures were also assessed, which are not yet published.

- INSTRUMENT APPROACH RNP RWY 05
- INSTRUMENT APPROACH RNP RWY 23

Data

The following data was used for the purpose of this assessment:

- Wind Turbine positions, height, ground elevation, and blade diameter – "Teindland Turbine Data 2025.msg"

Discrepancies and Assumptions

The ground elevation provided on the *Teindland IFP-011 V1.3 Safeguarding Client Information Form.xlsm* was confirmed by the client to have been sourced from Ordnance Survey (OS) Terrain 5 data – no vertical tolerance was added.

Data used for the assessment is as indicated in Table 1.

Obstacle (No/Name)	Latitude (WGS84)	Longitude (WGS84)	Obstacle (m AGL)	Radius (m)	Base Level (m AMSL)	Elevation (m AMSL)
T1	57°34'58.13"N	003°11'22.07"W	200	87.5	179	379
T2	57°34'36.48"N	003°11'47.37"W	200	87.5	208	408
T3	57°34'03.76"N	003°11'05.92"W	200	87.5	238	438
T4	57°33'49.77"N	003°10'43.74"W	230	87.5	229	459
T5	57°33'49.83"N	003°11'42.53"W	230	87.5	245	475
T6	57°34'04.86"N	003°12'00.84"W	230	87.5	259	489
T7	57°34'08.88"N	003°12'40.21"W	230	87.5	261	491
T8	57°34'23.33"N	003°12'51.23"W	230	87.5	251	481
T9	57°33'45.23"N	003°12'20.65"W	200	87.5	241	441
T10	57°33'30.73"N	003°11'31.26"W	230	87.5	233	463
T11	57°33'31.46"N	003°12'09.55"W	230	87.5	240	470
T12	57°33'14.32"N	003°11'56.29"W	230	87.5	223	453

Table 1: Data used for the assessment

IFP Safeguarding Assessment

An IFP Safeguarding assessment was completed against the applicable procedures for Runway 05 / Runway 23 at Inverness Airport.

Due to the technical nature of the information, this report is a distillation of the IFP modelling and subsequent assessment of the obstacles, the full data set is available if required[1]. The purpose of this report is to identify what procedures were assessed and whether there is an impact, in the event of an impact, potential mitigation is provided[2]. Where an impact was identified, only the assessment of the respective segment for said procedure, is provided.

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Table 2 provides an impact summary of all the IFPs that were assessed.

Assessed Procedure	Runway	Impact	Comments
ATCSMAC	Both	No	Obstacles fall outside of protection areas
Visual Manoeuvring Circling (VM(C))		No	Obstacles fall outside of protection areas
MSA 25NM VOR INS.		No	Nil
MSA RNAV 25NM ARP		No	Nil
Direct Arrivals ILS/LOC/DME (CAT A/B)	05	No	Obstacles fall outside of protection areas
Direct Arrivals ILS/LOC/DME (CAT C)		No	Obstacles fall outside of protection areas
ILS/DME/VOR (CAT A/B)		No	Obstacles fall outside of protection areas
ILS/DME/VOR (CAT C)		No	Obstacles fall outside of protection areas
LOC/DME/VOR (CAT A,B)		No	Obstacles fall outside of protection areas
LOC/DME/VOR (CAT C)		No	Obstacles fall outside of protection areas
VOR/DME (CAT A/B)		No	Obstacles fall outside of protection areas
VOR/DME (CAT C)		No	Obstacles fall outside of protection areas
HOLD (VOR INS)		No	Obstacles fall outside of protection areas
HOLD (RNAV HOLD, OVERHEAD NDB(L) IVR)		No	Obstacles fall outside of protection areas

[1] Please note that the full data set can run into an excess of 20 pages per procedure and can only be decoded by those familiar with the output generation from the IFP Software and trained IFP Designers.

[2] Mitigation for the IFPs is for the Airport (Sponsor) to decide upon as these may have a direct impact on their operations. It is recommended that further discussion and guidance is obtained from the CAA.

Assessed Procedure	Runway	Impact	Comments
TAA		No	Obstacles fall outside of protection areas
RNP		No	Obstacles fall outside of protection areas
ILS/DME/VOR (CAT A/B/C)	23	No	Obstacles fall outside of protection areas
LOC/DME/VOR (CAT A/B/C)		No	Obstacles fall outside of protection areas
VOR/DME (CAT A/B/C)		No	Obstacles fall outside of protection areas
VOR (CAT A/B/C)		No	Obstacles fall outside of protection areas
HOLD (VOR INS)		No	Obstacles fall outside of protection areas
Direct Arrivals ILS/LOC/DME (CAT A/B/C)		No	Obstacles fall outside of protection areas
Direct Arrivals VOR/DME (CAT A/B/C)		No	Obstacles fall outside of protection areas
HOLD (RNAV HOLD, OVERHEAD NDB(L) IVR)		No	Obstacles fall outside of protection areas
TAA		No	Nil
RNP		No	Obstacles fall outside of protection areas

Table 2: IFP Assessment Impact Summary

IFP's not Assessed

Nil.

Conclusion

The proposed windfarm does not impact the currently published IFPs for Inverness Airport.

Note:

The Civil Aviation Authority have published information on their website concerning "Event and obstacle notification[3]" for notification of obstacles including cranes and buildings, to the CAA.

[3] https://www.caa.co.uk/commercial-industry/airspace/event-and-obstacle-notification/event-and-obstacle-notification/

The CAA has also published information on their website concerning requirements for "Lighting and marking of obstacles[4]."

[4] https://www.caa.co.uk/commercial-industry/airspace/event-and-obstacle-notification/lighting-and-marking-of-obstacles/

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