
**THREE OAKS RENEWABLE
ENERGY PARK
EXTENSION**

**Environmental
Statement Appendix 10.3: Aviation
Safeguarding Assessment**

MAY 2026



Three Oaks Renewable Energy Park Extension– Aviation Safeguarding Assessment Report

Prepared by Dunnock Ltd for
Ridge Clean Energy Ltd



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References

- A. MOD Low Flying Consultation Zones map – (Reference DE090071 Ver 007 Date 7 October 2011)
- B. CAP 764 - CAA Policy and Guidelines on Wind Turbines – Edition 7 – dated 17 December 2025
- C. CAP 670 - Air Traffic Services Safety Requirements – Edition 3 – dated 7 June 2019

Task

Dunnock Ltd was tasked by Ridge Clean Energy Ltd (RCE) to provide an aviation safeguarding assessment for a proposed six 150 m turbine wind farm development, Three Oaks Renewable Energy Park Extension ("the Project"), located approx. 1.5 km north of the village of Thornholme in the East Riding of Yorkshire.

The technical aspects of the task were limited to providing an analysis of the line of sight and radio path profiles of civilian and military radars, and other NAVAIDS and communication systems.

The airspace assessment was limited to identifying airspace designations in the locale of the proposed Project and provide an impact assessment on adjacent licensed and unlicensed aerodromes. Potential impacts on the conduct of military low flying in the area were also identified.

Topography

The proposed development is 12 km northeast of Driffild. The closest military radars are the collocated primary and secondary surveillance radars (PSR/SSR) at Remote Radar Head (RRH) Staxton Wold which is 15 km northwest of the site and the space radar (SR) at RAF Fylingdales, which is 40 km northwest of the site. The proposed development is overlooked by the NATS En-Route Ltd (NERL) PSR at Claxby, which is 70 km to the south of the proposed development. The civilian airport at Humberside is 55 km south of the proposed development, with Air Traffic Control (ATC) terminal coverage served by a PSR.

Fraisthorpe Wind Farm, a nine-turbine development, is 5.5 km southeast of the Project and Lisset Airfield Wind Farm is a 12-turbine development, 7.5 km south of the Project. See Annex A Figure 1.

Technical Assessment

Survey software was used to identify all radar systems that would potentially be affected by the proposed development. Radars in the scope of the assessment were identified by their operational range. A list of sites is included in Annex B.

NATS survey information was used to provide safeguarding information for civilian communications, navigation and surveillance (CNS) systems.

Line of sight and radio path surveys were carried out against wind turbine #1¹, which is the turbine closest to the radar at RRH Staxton Wold and is at a height of 62 m above mean sea level (amsl).

Military Sites

The following systems were identified during the survey

RAF Fylingdales

The SR at RAF Fylingdales is part of a network of early warning and satellite tracking radars. The radar is 40 km from the proposed development and is in line of sight but not in radio path view the turbines. See Annex C Figure 1.

RRH Staxton Wold

The collocated PSR and SSR radars at RRH Staxton Wold are part of the UK military Air Surveillance and Control System (ASACS). They are located 15 km from the proposed development and are in line of sight and radio path view. See Annex C Figure 2.

Civilian Sites

Humberside Airport

The PSR at Humberside Airport is used for ATC services and is 55 km from the proposed development. Both line of sight and radio paths are obscured by terrain. See Annex C Figure 3.

NERL Claxby

The Claxby PSR provides a data feed for NATS enroute air navigation services and is 70 km from the proposed development. All turbines are visible in both line of sight and radio paths from the radar. See Annex C Figure 4.

The proposed development is not within the site consultation zones of any other NERL CNS systems.

Civilian Airspace Assessment

Airspace

The proposed development does not sit beneath any air lanes, and this may provide some mitigation for any NERL concerns regarding the Claxby radar. However, with a move towards the implementation of Performance Based Navigation (PBN)², the reliance on dedicated air lanes and ground-based navigation aids to route air traffic is reducing, which will require the CAA to take a wider view of how airspace is managed.

Adjacent aerodromes

Licensed

- Humberside Airport located 55 km south of the proposed development
- Leeds East, Sherburn and Sandtoft are all approximately 65 km to the south and west of the site

¹Lat 54.07490737, Long -0.312166358

² <https://www.icao.int/safety/pbn/pbn-overview> - accessed 6 February 2026

None of these aerodromes are likely to be directly affected by the proposed development, and it is unlikely any objections will be raised by the operators.

Unlicensed

There are several unlicensed aerodromes in the vicinity of the proposed development, the closest of these being Bridlington (7 km northeast) and Eddsfield (11 km northwest). The proposed development should not impact these aerodromes.

Military Airspace Assessment

Airspace

See Annex A Figure 2.

The proposed development is located within the Vale of York Area of Intense Aerial Activity (AIAA).

The proposed development is also situated below the Southern Military Danger Area (MDA) D323J, which has a minimum flight level of FL150 (15 000 ft or 4.5 km).

Low Flying

Referencing the Low Flying Zone Consultation Zone chart (Reference A); the proposed development is in the Humberside North Helicopter Night Training Area (HNTA).

Aerodromes

The closest military aerodrome is RAF Leeming, which is 85 km northwest of the proposed development.

Analysis

Technical Assessment

RAF Fylingdales

The radar at RAF Fylingdales is in line-of-sight view of the turbines but due to beam elevation any returns would only be generated in the radar sidelobes. However, whilst these are unlikely to be detectable, the MOD may still have concerns.

RRH Staxton Wold

With the proposed development relatively close to the radar at RRH Staxton Wold, and fully visible, the MOD may raise an objection. Of note is the fact that an objection was raised against the nearby Fraithorpe Wind Farm development but was subsequently dropped, with the inclusion of a planning condition that required mitigation to be agreed prior to construction commencing.

Currently, it is understood that the PSR at site, the Indra LTR-25, has the same or similar capabilities as the Indra 3D radar that NERL are procuring to mitigate wind farm clutter. The effectiveness of this capability may be reduced at the relatively small distances under consideration due to the level of returns from the turbines. However, the radar has a reported³ minimum operating range of 9 km and it may be possible to increase the minimum range gate to

³ https://www.indracompany.com/sites/default/files/indra_lrr_radar_en_02_2019.pdf

16 km over the azimuth of the site to remove or reduce clutter to a tolerable level, without causing a significant degradation in capability. Additionally, depending on what minimum elevation the radar is configured to scan at, it may be possible that the turbines will not be visible in the main beam of the radar, and no modification will be required.

The MOD may also raise concerns due to the proximity of the proposed development to the collocated SSR. Although CAP 764 (Reference B) advises that SSR located 10 km away from the wind turbines are not affected, CAP 670 (Reference C) advises that operational and technical aspects should be considered in all cases. Therefore, the MOD may require operational and technical assessments to be conducted on the SSR to determine what, if any, impact the proposed development may have on radar performance.

NATS Claxby

NERL are currently working towards the mitigation of wind turbine clutter by installing Indra 3D radars across their fleet.

Humberside

The PSR at Humberside Airport is obscured by terrain and the proposed development should not impact the radar's operation.

Airspace Assessment

The proposed development does not sit underneath any air lanes, and with the introduction of the Indra 3D radars to mitigate the effects of clutter it is possible that NERL will not raise any long-term objections that would affect the proposed development. However, NERL may consider it necessary to account for the cumulative effect of clutter caused by wind farm developments outside of controlled airspace and may have concerns if several developments are planned across a wide arc of coverage. Noting this, RCE should engage with NERL to understand any concerns.

Due to their distance from the proposed development, the military and civilian licensed aerodromes identified in the survey are unlikely to be affected. The unlicensed aerodromes in the vicinity of the proposed development are also sufficiently distant that it is unlikely their operations would be affected.

The proposed development is within the Vale of York AIAA, which would be used for military aircraft on training and exercise tasks, and potentially for transiting between civilian and military aerodromes and the Southern MDA, which extends out over the North Sea to the east of the site. These airspace designations are primarily used to notify civilian aircraft of the hazards of navigating through these areas, but the MOD may raise concerns should they assess that the proposed development will introduce restrictions on radar coverage and/or increase hazards in the airspace.

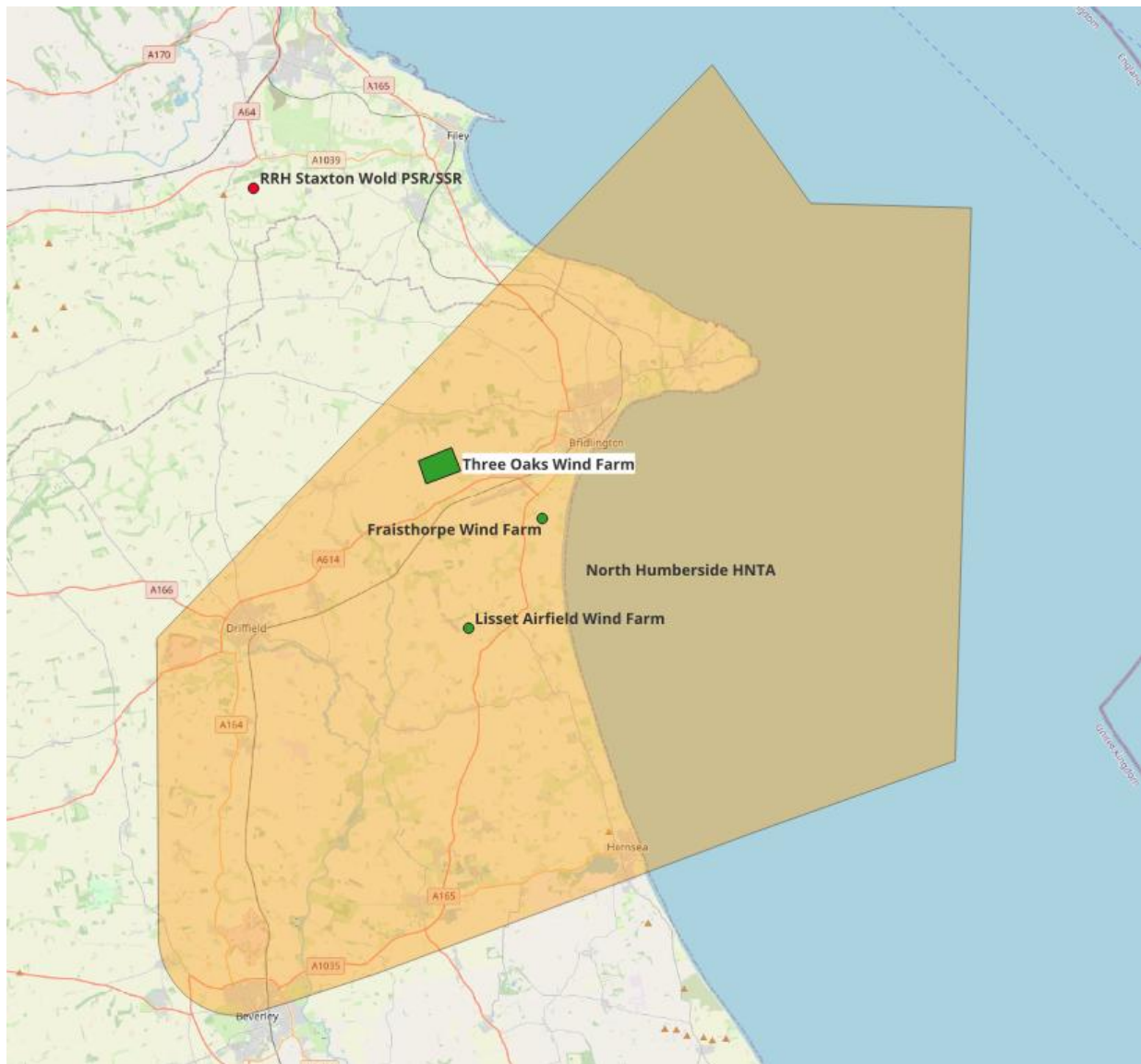
The MOD may also have concerns that the proposed development will impact low flying training due to the location of the site within the Humberside North HNTA. RCE should be prepared to consult on what mitigations may need to be put in place to enable nighttime low flying training to continue to be conducted safely. The developments at Fraisthorpe and Lisset Airfield are also within the HNTA, so a similar approach to resolve any objections raised on these sites may be suitable.

Conclusions

The MOD will likely have technical and airspace concerns with the proposed development. There may be the potential for mitigation, and it is recommended that RCE consult with the MOD.

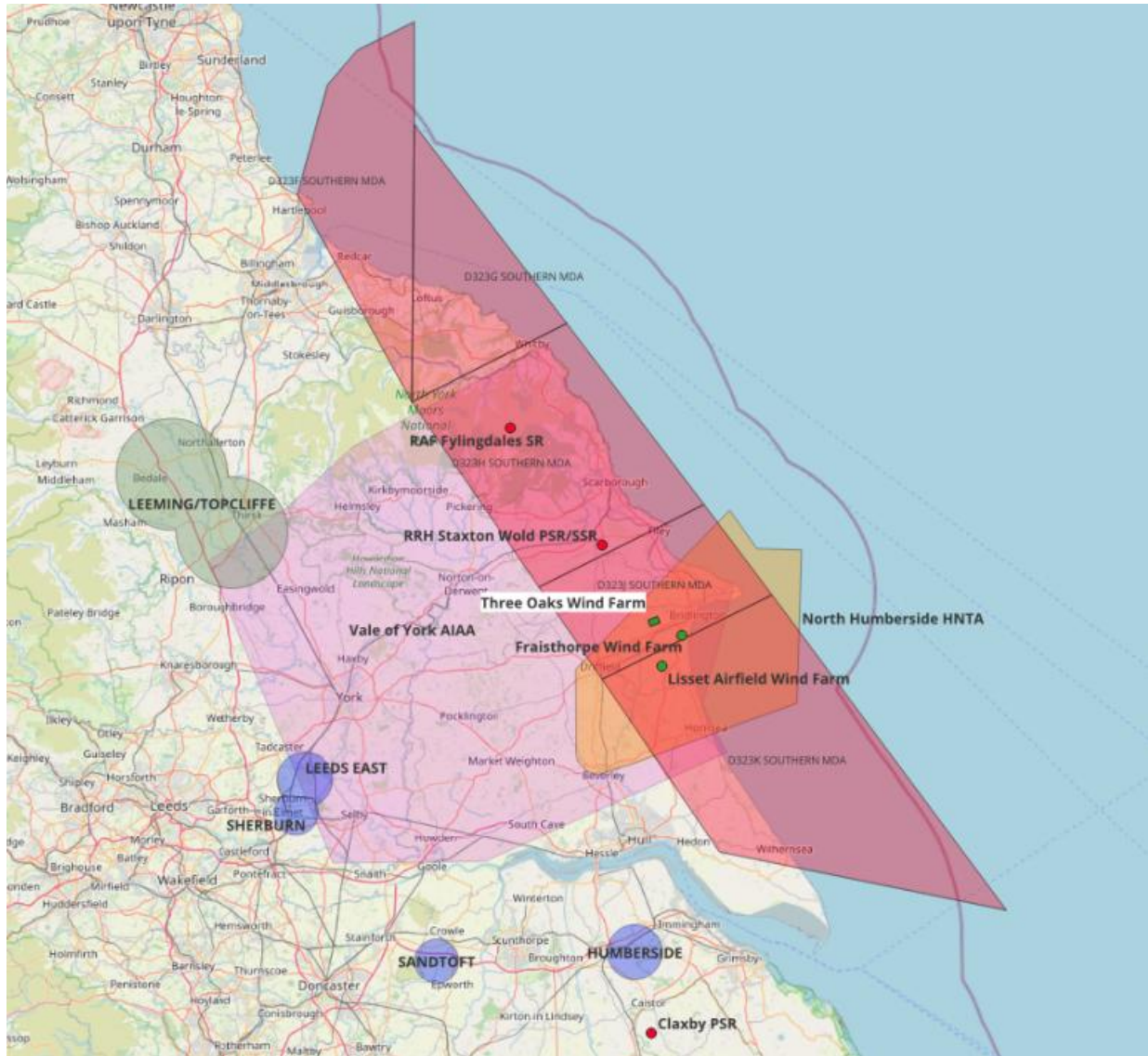
NERL may raise concerns, but they do have a radar mitigation process underway, with the roll out of the new radar fleet, and this may be sufficient to resolve any potential issues caused by the proposed development.

Annex A – Maps



© [OpenStreetMap contributors](#)

Figure 1 – Wind Farm Locations and Humberside North – HNTA airspace



© [OpenStreetMap contributors](#)

Figure 2 – Airspace Surrounding the Proposed Project

Key:

Red – Military Danger Areas	Green – Military Air Traffic Zones
Amber – Humberside North HNTA	Blue – Civilian Air Traffic Zones
Purple – Vale of York AIAA	

Annex B – Radar List

Radar site	Type	Distance (km)	LOS	Radio Path
Claxby	PSR	70	Y	Y
Fylingdales	SR	40	Y	N
Humberside	PSR	55	N	N
Staxton Wold	PSR/SSR	15	Y	Y

Annex C – Path Analysis

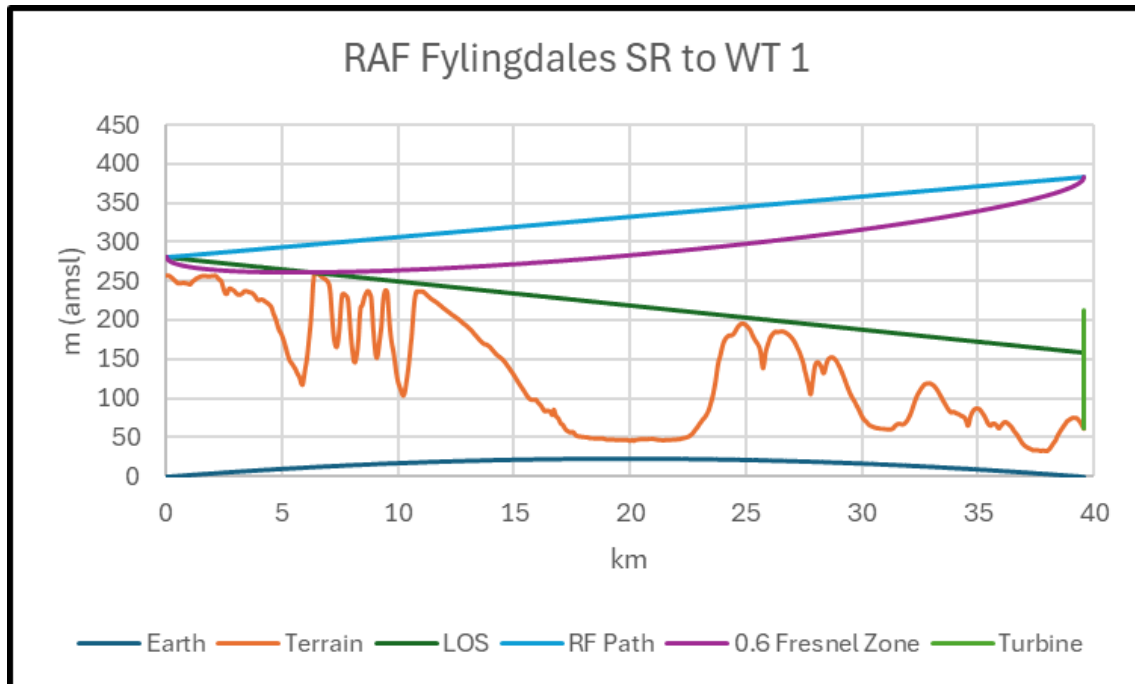


Figure 1 – Path analysis for RAF Fylingdales SR

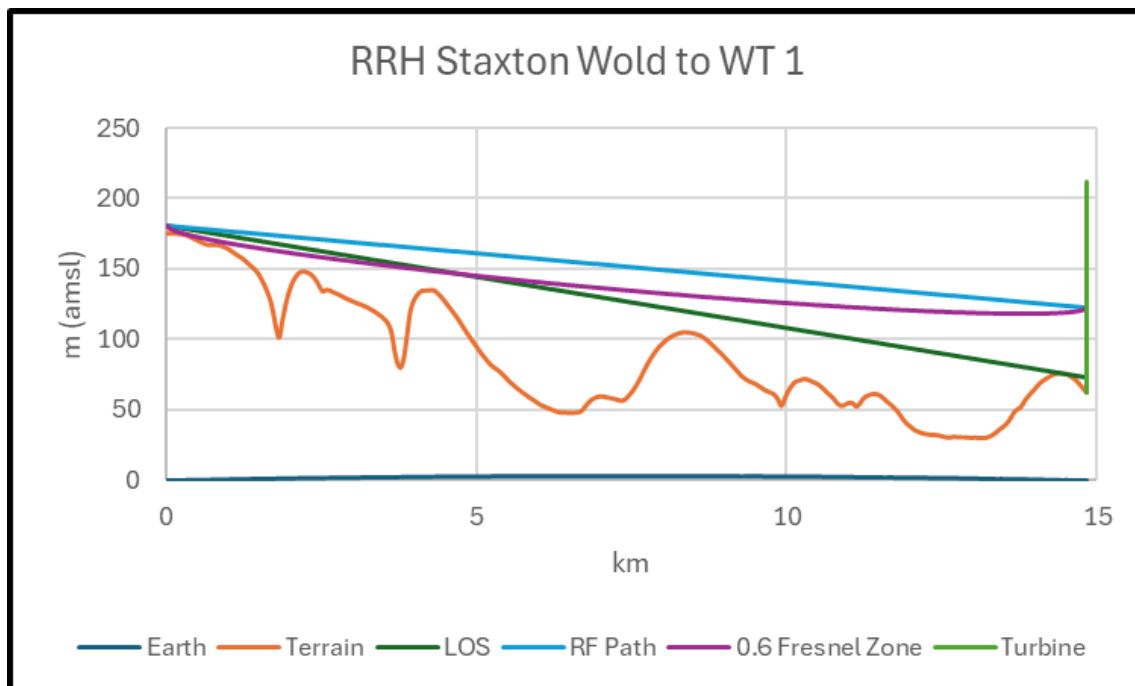


Figure 2 – Path analysis for RRH Staxton Wold PSR

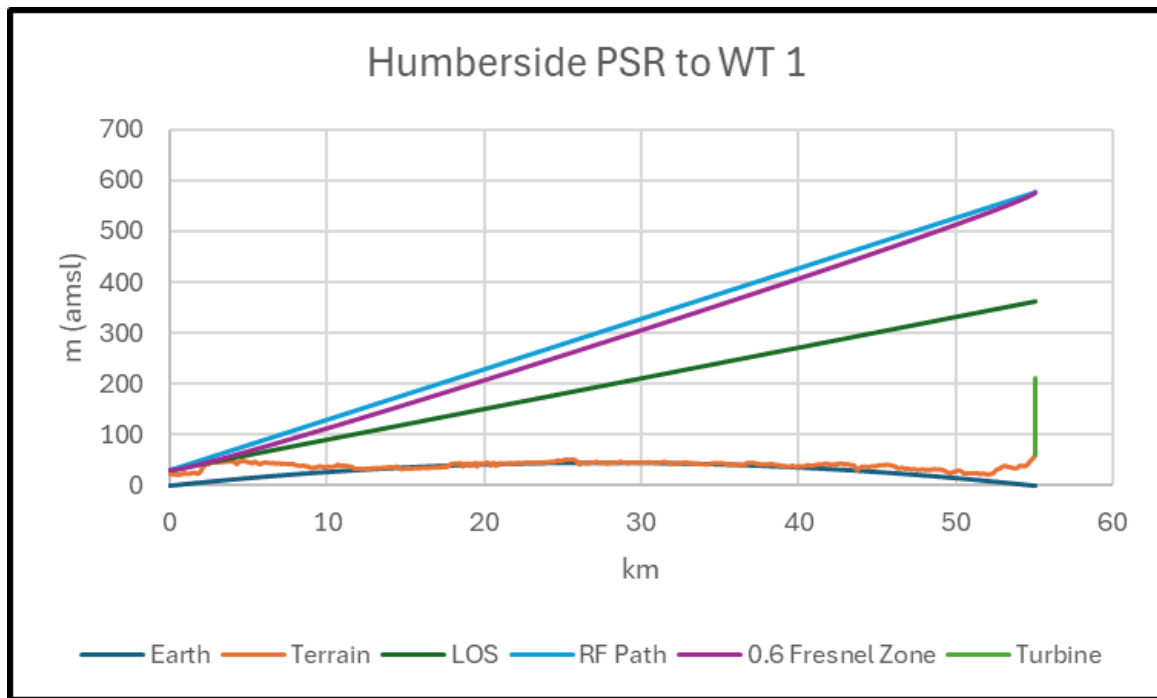


Figure 3 – Path analysis for Humberside Airport PSR

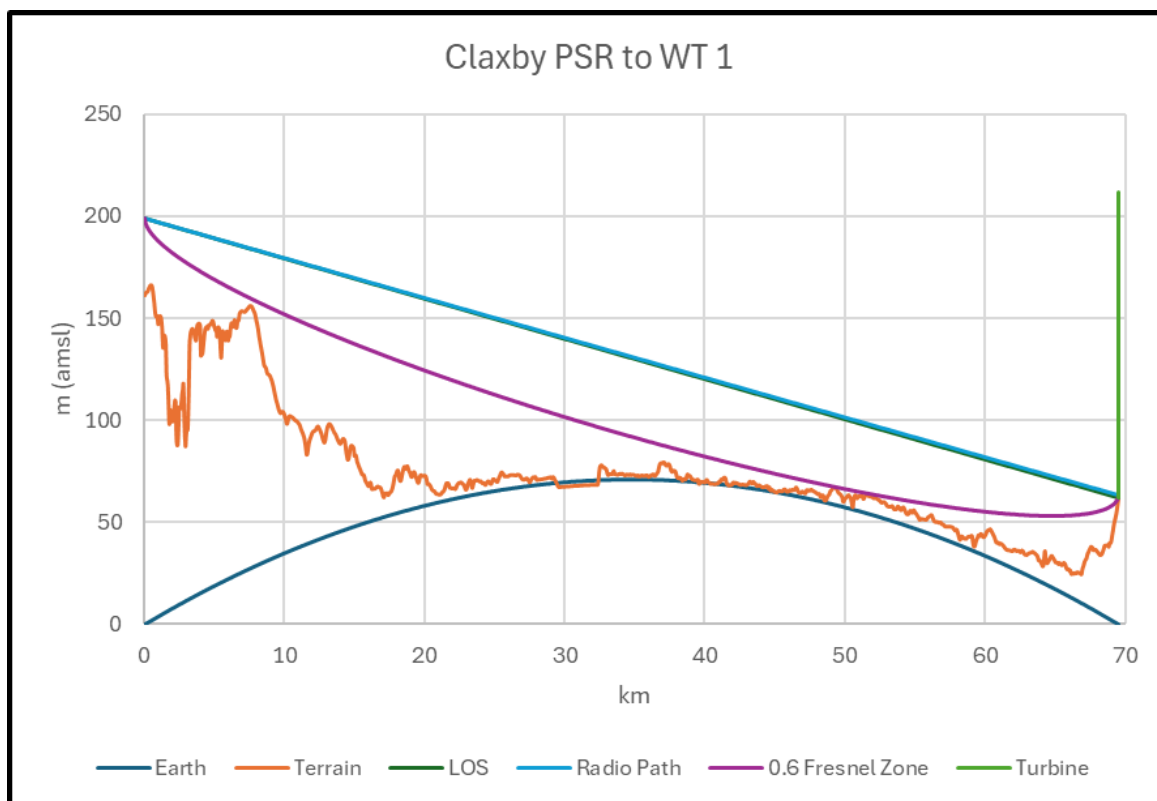


Figure 4 – Path analysis for Claxby PSR