



Onward 2030 WP3 – Final Report

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Abbreviations

1. *ADMB – Aviation and Defence Management Board*
2. *AMS – Airspace Modernisation Strategy*
3. *CAA – Civil Aviation Authority*
4. *CAP – Civil Aviation Publication*
5. *CAPEX – Capital Expenditure*
6. *CNS – Communication, Navigation and Surveillance*
7. *DfT – Department for Transport*
8. *DESNZ – Department for Energy Security and Net Zero*
9. *EIAR – Environmental Impact Assessment Report*
10. *IFP – Instrument Flight Procedure*
11. *MoD – Ministry of Defence*
12. *NDA – Non-Disclosure Agreement*
13. *NSIPs – Nationally Significant Infrastructure Projects*
14. *OPEX – Operating Expenditure*
15. *OWIC – Offshore Wind Industry Council*
16. *Pd – Probability of Detection*
17. *PSR – Primary Surveillance Radar*
18. *VHF – Very High Frequency*
19. *WP – Work Package*



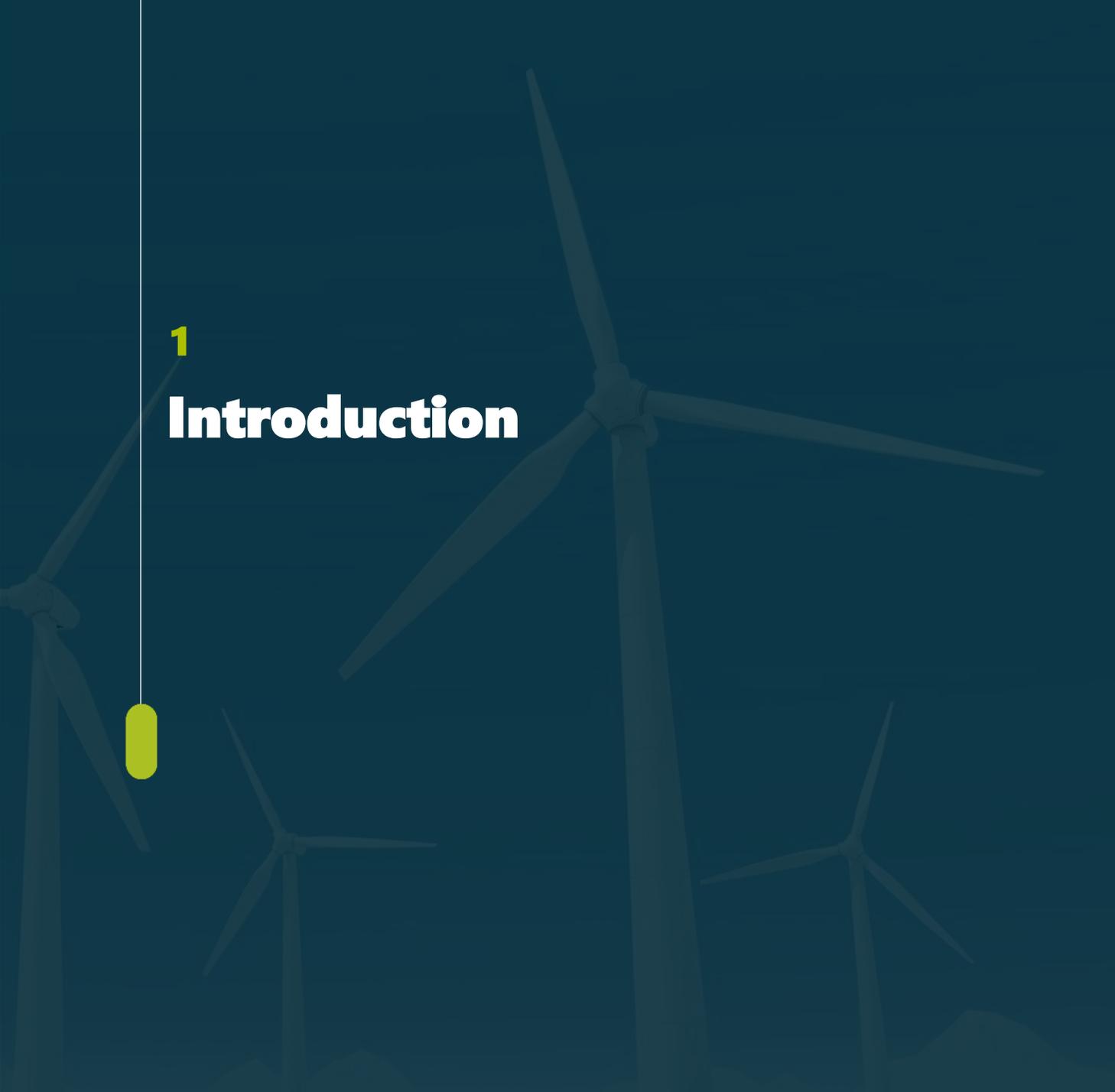
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1

Introduction



Background

This report has been produced under Onward 2030 WP3 which seeks to agree a strategy for mitigating the impact of wind farms on aviation systems (and specifically primary radars) to enable coexistence between Aviation and Wind.

The aviation and wind farm industries are both important to the UK economy but have competing needs that need to be balanced:



Current UK Government has committed to a net-zero economy transition and aims to double the usage of onshore wind energy by 2030.



Aviation remains vital to UK economy and innovation, as airspace is considered key national infrastructure. On this note, UK CAA's Airspace Modernisation Strategy (AMS) provides a forward-looking framework to modernise UK aviation, supporting competition and innovation.

Onward 2030 was initially established by RenewableUK to support the objectives of the UK Government's Aviation Management Board to promote coexistence between onshore wind farms and aviation systems and ensure a transition to a net-zero economy. Since the creation of the Scottish Government's Onshore Wind Sector Deal, Onward 2030 has been responsible for the delivery of the Sector Deal's technical commitments to enable delivery of 20GW of onshore wind in Scotland by 2030. As part of the delivery of these technical commitments Onward 2030 created four work packages:

- WP1 – market survey on existing and emerging wind farm tolerant surveillance systems and costs
- WP2 – instrument flight procedures
- **WP3 – mitigation solutions**
- WP4 – aviation survey
- WP5 – transparency (management of aviation issues)

The Scottish Onshore Wind Sector Deal stated key commitments in the following areas:



Supply chain, skills and the circular economy: Strengthen Scotland's onshore wind supply chain by addressing skills gaps, increasing local content, and enabling circularity (reuse, remanufacture and recycling), including delivery of a blade treatment facility by 2030.



Community: Improve early engagement, community benefit delivery and shared ownership by standardising fund management, ensuring agreements are secured at key project milestones, and supporting impactful local investment.



Land use and environment: Expand onshore wind while enhancing biodiversity and managing peat/land impacts through consistent measurement approaches and a shared national environmental data repository.



Planning: Reduce consenting times by standardising EIAR scope and consent templates, improving resourcing and coordination, and targeting faster Section 36 and Section 36C determinations.



Legislative and regulatory: Use pipeline evidence to support more strategic grid investment and better coordinated turbine transport, while improving the network connection process and connection queue management.



Technical: Deliver a fair, transparent aviation mitigation process and seek to unlock constrained deployment while maintaining aviation safety and protecting the seismic array.

Aligning scope to current UK government policy

Since Onward 2030 started its work the onshore wind farm ban in England has been lifted, the Clean Power 2030 Action Plan was created setting out an objective to deliver 27-29 GW of onshore wind in the UK and an Onshore Wind Taskforce Strategy has been created under the Department for Energy Security and Net Zero (DESNZ) identifying more than 40 steps government and industry will take.



The scope of Onward 2030 has therefore been adapted to align to the new expanded UK-wide strategy under the direction of DESNZ and the new Aviation and Defence Management Board (ADMB).



The original scope of WP3 included stakeholder workshops to identify areas of disagreement and uncertainty, as well as to agree the actions needed to reach consensus. However, with the adaption of the scope to align to the Onshore Wind Task Force Strategy under DESNZ, any stakeholder workshops will now be delivered separately in coordination with DESNZ.

Objectives and Scope of WP3

Objectives



- Build consensus for a long-term coexistence strategy for mitigating the impact of wind farms on Communication, Navigation and Surveillance (CNS), with particular focus on primary radars.
- Promote cross-industry cooperation between the Government, renewable energy and aviation sectors.
- Inform on future decision making and support Government strategies to enable the shift from fragmented case-by-case agreements towards long-term coexistence between the Aviation and Wind industries, while facilitating onshore development.

Scope

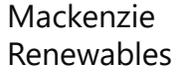


- Collect feedback from key stakeholders on the feasibility of long-term cooperative mitigation strategy between Aviation and Wind industries.
- Use findings from stakeholder interviews as complimentary evidence and map observations from stakeholder discussions against the 42 DESNZ actions, highlighting alignment with the strategy and overlapping perspectives.
- Provide a set of recommendations, identifying areas of additional consideration, where stakeholder insights may complement current DESNZ strategy. The recommendations are intended to provide input to and support subsequent discussions by relevant bodies, such as the ADMB.

Stakeholder Consultations

Invitations to participate were sent to stakeholders from **30 organisations**, including **11 airport** stakeholders. Ultimately, stakeholders from **16 organisations** participated in the consultation, as listed below:

ANSPs	Aviation Authorities	Military	Government
			  

Airports	Energy	Consultants
 	  	    

Declines: *ACOG, Sagentia, Edinburgh Airport, Glasgow Prestwick Airport*

No response: *AirportsUK, Aberdeen Airport, Glasgow Airport, Cardiff Airport, Coleman Aviation, Newcastle Airport, MAG, Norwich Airport, Southend Airport, Welsh government*

Stakeholder Interview Context Review

A total of **16 interviews** were conducted. The high-level areas outlined below correspond to the questions agreed with Onward 2030 and represent the core areas used to guide the stakeholder interviews. Discussions were open and where appropriate, questions were adapted, and additional topics explored in accordance with each participant's area of expertise. The full list of questions aligned with these high-level areas can be found in Appendix A for reference.



Future airspace and surveillance infrastructure development



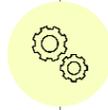
Evolving role of PSR and other forms of surveillance



Balancing stakeholder priorities across aviation and energy sectors



Challenges that need to be addressed by a long-term coexistence strategy



Existing mitigation solutions and their performance



Feedback on Onward 2030 WP1 findings



Best practice for mitigation



Designing a UK-wide mitigation strategy with broader benefits



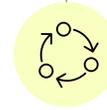
Cost-effectiveness and efficiency in identifying solutions



Aviation and wind industry coordination

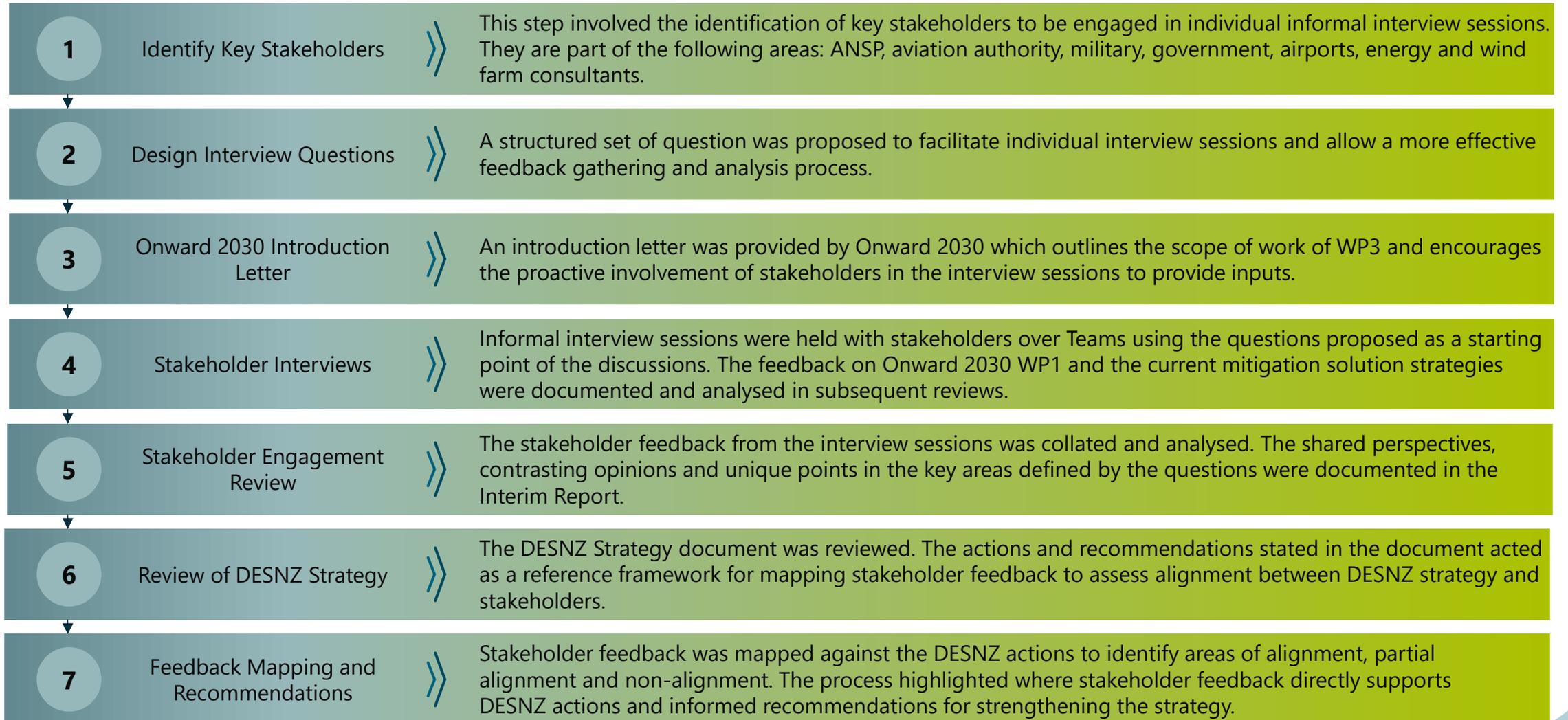


Improving clarity and usefulness of guidance material

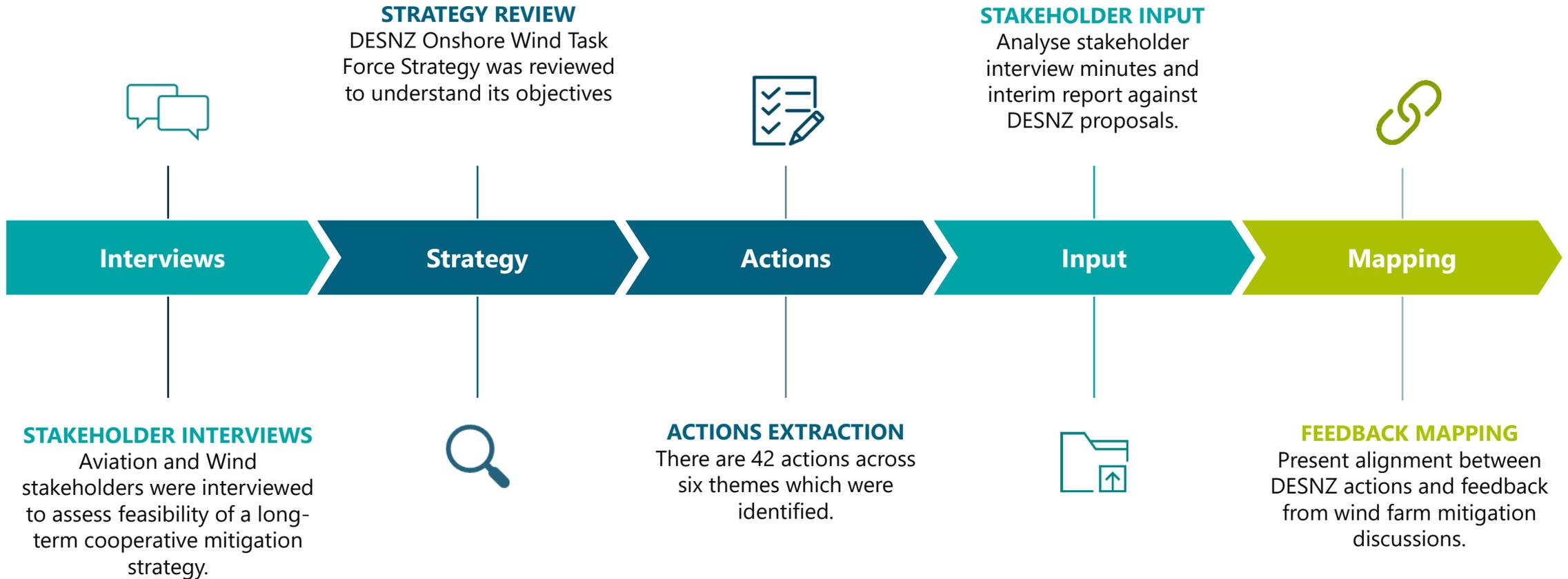


Ensuring transparent fair and equitable processes

Stakeholder Feedback Mapping Approach (1)



Stakeholder Feedback Mapping Approach (2)





2

Summary of main themes from stakeholder consultations

Common Themes Emerging from Consultations

Enduring need for PSR



Primary radar remains an essential surveillance tool for many stakeholders, despite advancements in cooperative surveillance and electronic conspicuity:

- PSR is considered vital for safety and continuity, particularly in the event of transponder failure or spoofing. (ANSPs, Airports, Aviation Authorities)
- PSR is relied upon for situational awareness and safeguarding. (Airports, Consultants)
- Even with increase of e-conspicuity under the AMS and TMZs, full reliance on cooperative surveillance is seen as premature and PSR should not be phased out entirely. (ANSPs, Airports, Consultants)
- Military surveillance needs remain a dominant driver of PSR retention. (Military, Government, Aviation Authorities)
- Wind farm developers seem to have accepted the need for PSR but seek certainty around type and duration of mitigation required. (Energy, Consultants)

Variation in radar performance and market maturity



Stakeholders acknowledge that while wind farm tolerant radars exist, performance varies significantly between systems and suppliers:

- The radar market is now generally considered mature, with growing competition among suppliers offering wind farm mitigation capabilities. (ANSPs, Airports, Consultants)
- Increasing range of options enables more tailored solutions but also requires better comparative data to support procurement. (ANSPs, Airports, Consultants)
- Indra, Terma, and Thales dominate current procurement decisions, but other suppliers such as Esat, Hensoldt, and Aveillant were also mentioned. (ANSPs, Airports, Consultants)
- Stakeholders suggest that procurement decisions should be guided by long-term strategic planning, rather than reactive, short-term responses where technical updates are evaluated on a case-by-case basis which may result in disproportionate costs. (Airports, Energy, Consultants)
- Radar actual performance highly depends on the physical and operational environment in which it is installed, while the level of acceptable performance depends on operational needs, meaning that no solution works universally across all airspace environments. (Consultants, Airports)

Common Themes Emerging from Consultations



Radar mitigation strategies

While the availability of mitigation techniques has improved, stakeholders report that implementation remains complex. No single solution fits all operational environments, and performance validation remains a challenge.

- Common mitigation methods include blanking, infill radars and TMZs, but are considered to only provide temporary solutions. (ANSPs, Airports, Consultants)
- Mitigation systems are not “plug-and-play”; they require site-specific tuning and regulatory approval. (Airports)
- Blanking is often sufficient for small developments but unsuitable for complex airspace or high-traffic environments. (ANSPs, Energy)
- TMZs are an effective workaround offshore, but their onshore application is limited due to general and military aviation activity and CAA constraints. (ANSPs, Aviation Authorities)
- Infill radars are not considered to be a long-term cost-effective solution (e.g. 8-9 Terma Scantter units for a control centre). (Military)



Key challenges for aviation and wind farm coexistence

Despite available mitigation technologies and growing market maturity, stakeholders consistently identified barriers that limit progress.

- Stakeholders suggested that engagement with MoD and NATS on mitigation planning could benefit from greater consistency, efficiency, transparency, and procedural clarity. (Military, Energy, Consultants)
- Further clarity from the CAA on performance requirements and assessment criteria for acceptable mitigation would help ensure more consistent interpretation of guidance and greater regulatory confidence. (Airports, Energy, Consultants)
- Differing commercial interests between airports and developers lead to adversarial engagement and objections as developers perceive airports as revenue driven and airports demand compensation for mitigation costs. (Airports, Energy)
- The Military has more complex requirements to fulfil, including additional safety requirements, compared to civil requirements for the acceptance of new systems hence leading to longer timescales in the approval of mitigation solutions. (Military)

Common Themes Emerging from Consultations



Resource and capability gaps across stakeholders

Stakeholders acknowledge inadequate resourcing or access to specialised expertise as a major obstacle to progress:

- The CAA has a critical role in coordinating and validating mitigation strategies, but under-resourcing, limited funding, and unclear remit affect involvement in mitigation discussions, despite being the body approving outcomes. (Energy, Airports, Consultants)
- CAA's resourcing constraints were repeatedly identified as a blocker. (Government, Energy, Consultants)
- Some wind farm developers (e.g. new entrants) lack technical knowledge and aviation impact awareness, often leading to unrealistic proposals. (Airports, Consultants)
- Small and regional airports lack resources and technical expertise to evaluate or engage in radar mitigation discussions. (Airports)
- There is a general shortage of multidisciplinary experts to support the sector across all sides. (Airports, Aviation Authorities, Consultants)
- There is need for better training and standardised technical resources.



Need for strategic, centralised and coordinated solutions

Stakeholders call for a national, coordinated approach to managing coexistence:

- Greater coordination is needed between CAA, DfT, DESNZ, and MoD. (Government, Aviation Authorities)
- Proposal that centralised radar infrastructure management would offer a cost-effective and efficient approach, where a third-party entity (e.g. ANSPs) could own, operate, and maintain radar assets, supplying surveillance data as a service to multiple users as a cost effective and efficient. (Airports, Consultants)
- Airports and developers demand standardised engagement templates or a shared "briefing pack" to explain aviation impacts and expectations consistently across projects and to reduce duplication and inefficiency when review wind farm applications. (Airports, Energy, Consultants)
- Some stakeholders discussed the idea of a central mitigation fund that could be socialised across the industry to reduce commercial pressure on smaller airports and distribute mitigation costs. The fund should be of finite duration, designed to support a structured transition rather than create long-term dependency. (Airports, Consultants)

Common Themes Emerging from Consultations



VHF communications concerns

VHF communication degradation and the limitations of CAP 670, which governs how VHF impacts are assessed have been repeatedly brought up in discussions:

- CAP 670's methodology for assessing VHF interference is viewed as outdated and not designed for modern turbine sizes or densities. (Airports, Aviation Authority)
- While past trials suggest that VHF interference may not be an issue in general, there is no certainty if this will be a future issue and whether wind farms will have a direct impact on systems and sensors. (Airports)
- There is a general lack of understanding about VHF communications and raising awareness of the topic is critical. (Airports, Aviation Authorities)



Lack of transparency and overuse of NDAs

The use of NDAs creates frustration, especially among developers and consultants seeking open dialogue.

- NDAs restrict the sharing of mitigation experience, technical data, and cost structures, limiting the sector's ability to learn from past projects. (Energy, Consultants)
- NDAs are suspected to obscure pricing practices, including potential for double charging. (Energy)
- NDAs are seen as a barrier to transparency in mitigation solutions and costs. (Energy, Consultants)

Common Themes Emerging from Consultations



Uncertainty over funding responsibilities and costs

There is ongoing disagreement about who should pay for radar upgrades and mitigation measures, which is causing delays, mistrust, and strained relationships between airports and developers.

- Stakeholders mention there is a lack of clarity on what is defined as a mitigation cost and lack of clear mitigation costs breakdown. (Energy, Consultants, Military)
- Developers are generally open to pay for one-time mitigation costs, but not for long term maintenance and updates. (Energy, Government, Consultants)
- There is concern that radars with wind farm mitigation features are sold at disproportionate prices. (Airports, Military)
- Some developers suspect that airports are using wind farm proposals as an opportunity to get compensation for already planned or needed radar infrastructure works. (Energy, Consultants)



3

Stakeholder feedback alignment with DESNZ strategy



DESNZ Onshore Wind Taskforce Strategy

DESNZ is responsible for delivering secure, clean, and affordable energy while driving the UK's transition to net zero. Within this remit, the Onshore Wind Task Force Strategy outlines key themes, actions, and recommendations to accelerate onshore wind deployment and improve cross-sector coordination. Some of the actions under these themes directly relate to aviation and defence considerations, including planning policy, stakeholder engagement, technical standards, and funding mechanisms for mitigation solutions.

1 *Site Selection, Preparation and Consenting*

Theme 1 focuses on reforms to make the planning system for onshore wind more efficient, including:

- Updating planning policy and guidance
- Improving data availability and training
- Consulting on permitted development rights.

2 *Networks and System Planning*

Theme 2 centres on ensuring the national grid can keep pace with low-carbon generation. Actions include:

- Radical connections reform
- Delivery of a Strategic Spatial Energy Plan

3 *Communities and public perception*

Theme 3 introduces measures to strengthen the relationship between developers and local communities, including:

- Embedding best practice engagement in planning guidance
- Updating community benefits guidance
- Running regional communications campaigns

4 *Aviation and Defence*

Theme 4 outlines new commitments to resolve radar and defence-related barriers to onshore wind.

Actions include:

- Survey on aviation and defence objections
- Enhancing the CAA's role as a mediator
- Funding trials of mitigation solutions

5 *Finance and Routes to Market*

Theme 5 addresses how onshore wind projects access markets and financing which includes the proposal of:

- Joint government–industry subgroup under a new Onshore Wind Council
- Reforms to the Contracts for Difference scheme

6 *Supply Chain, Skills and Workforce*

Theme 6 seeks to build a stronger evidence base to inform policy on industrial capacity and skills with commitments to research for:

- Supply chain constraints and opportunities
- Industry-led workforce monitoring

Alignment of stakeholder feedback to DESNZ strategy

Stakeholder feedback from Onward 2030 discussions showed the **strongest correspondence** to **Aviation and Defence** as the most relevant theme area in the Onshore Wind Taskforce Strategy. Stakeholders consistently raised issues of capacity, transparency, and resourcing in aviation and defence, directly corresponding to many of the proposed measures.

The correspondence of the stakeholder feedback with the Aviation and Defence theme actions is presented in detail in the following slides followed by a summary of the correspondence to the remaining theme areas in the strategy.

Theme	Correspondence	Actions	Summary
Theme 4 Aviation and Defence	Full	22, 23, 24, 25, 26, 28, 29	Stakeholders strongly supported the need for systematic monitoring and assessment of aviation impacts, clearer guidance on the use of NDAs, transparent and publicly available trial results of mitigation solutions, dedicated posts within both the MoD and CAA, clearer guidance on acceptability of wind farm tolerant radars in different operational situations, and financial support mechanisms such as a mitigation fund. These directly match government commitments.
	Partial	27	Stakeholders called for needed updates to existing CAP guidance, particularly CAP 670, which aligns in principle with government’s proposal to update CAP 764 and related best practice.
	Not Applicable	30, 31	Measures, such as unlocking onshore wind capacity around the Eskdalemuir seismic array, were not discussed by stakeholders as they fall outside the aviation–wind interface considered in the interviews.

Theme 4: Aviation and Defence

Theme 4 commits to addressing radar and defence-related barriers through surveys, enhancing the CAA's and MoD's roles, and funding mitigation trials to reduce objections while maintaining safety.

Actions (Correspondence)	Corresponding Stakeholder Feedback and Interpretation
<p>Action 22 (Full): The Government will commission an annual survey of onshore wind impacts on aviation and defence infrastructure.</p>	<ul style="list-style-type: none"> • Aviation Authority, Military: Noted a lack of credible, shared performance data on mitigation systems and stated the need for independent validation of the solutions in the operating environment. • Consultants: Requested transparency on the mitigation limitations, operational environments and operating principles. • Energy: Called for more transparency from military entities and requested clear grounds to justify their objections. <p>Interpretation: Stakeholders consistently emphasised the lack of credible, transparent evidence on the effectiveness of mitigation solutions and called for systematic monitoring. Through collecting the information on planning objections, a picture of associated costs and timelines can be portrayed. A baseline survey standard repeated annually would improve integrity, comparability and trend visibility, but may be constrained by data gaps, sensitivity and stakeholder reluctance.</p>
<p>Action 23 (Full): The Government will develop best practice guidance on use of Non-Disclosure Agreements (NDAs) when resolving aviation objections.</p>	<ul style="list-style-type: none"> • Energy: NDAs were described as a barrier to transparency in mitigation discussions and sometimes hidden within layered agreements making it hard for developers to understand costs and solutions. Additionally, it limits the open dialogue with the right people. • Consultants: Highlighted that the use of NDAs and lack of transparency are slowing down progress for agreeing and implementing mitigation solutions and referred to NDAs as a blocker to coexistence. • Government: Confirmed that they are researching best practice guidance for the use of NDAs. • Military: Stated NDAs limit their full visibility to data on trials which they are directly involved in. <p>Interpretation: While NDAs are prevalent across the Wind industry, appropriate disclosure of information is essential to ensure that the reasons for objections are understood and can be referenced in the future. Stakeholders noted that NDAs currently act as a barrier to effective discussions on mitigation measures, and therefore called for clear, practical top-down guidance from government. Therefore, this provides clarity and certainty for planning authorities and developers, as well as reduce the use of NDAs. Additionally, guidance should also clarify when NDAs are commercially necessary and avoidable.</p>

Theme 4: Aviation and Defence

Theme 4 commits to addressing radar and defence-related barriers through surveys, enhancing the CAA's and MoD's roles, and funding mitigation trials to reduce objections while maintaining safety.

Actions (Correspondence)	Corresponding Stakeholder Feedback and Interpretation
<p>Action 24 (Full): The Government will co-ordinate a developer-funded programme of trials to test a range of potential solutions to onshore wind turbine interference with MoD air traffic control radars.</p>	<ul style="list-style-type: none"> • Energy: Highlighted that military entities provide objections without clear grounds. Also, current internal testing and evaluation processes of MoD are considered unclear. • Military, Consultants: Stressed that performance claims need to be verified in the relevant performance context and military has a more stringent requirement on mitigation solutions than civil requirements. • Consultants: Suggested publication of trial results and noted that MoD were often seen as a blocker for approving wind farm applications (e.g. STAR NG trials at Lossiemouth are still not completed). They also mentioned the difficulty in obtaining useful information about agreed MoD radar mitigation schemes. <p>Interpretation: Stakeholders consistently called for more transparency on existing trials to verify the effectiveness of technical mitigation solutions for wind farm impacts on radars. Stakeholders highlighted delays in past trials, and the need for published results to ensure credibility. They also outlined the importance of making evidence from previous mitigation procurements and implementations publicly available, so that lessons learnt can improved future trials. A coordinated, developer-funded trial programme would directly address these concerns, providing the operational validation and transparency needed to support decision-making. This requires clear roles (MoD/DESNZ), stable funding, and use of prior trial evidence to avoid duplication.</p>
<p>Action 25 (Full): The Government will introduce a developer-funded, full-time post in the MoD with responsibility for leading on strategic solutions to onshore wind turbine interference with air traffic control radar.</p>	<ul style="list-style-type: none"> • Military: Highlighted that shortage of skilled people to test, verify, and procure systems effectively. Staffing capacity is also a limitation to the effective approval on the growing number of wind farm applications. <p>Interpretation: The MoD currently lacks capacity and technical expertise to manage wind farm safeguarding effectively and a developer-funded, full-time MoD post would directly address this resourcing gap. The post must have sufficient seniority, clear scope/duration, and sustained MoD commitment to deliver effective impact.</p>

Theme 4: Aviation and Defence

Theme 4 commits to addressing radar and defence-related barriers through surveys, enhancing the CAA's and MoD's roles, and funding mitigation trials to reduce objections while maintaining safety.

Actions (Correspondence)	Corresponding Stakeholder Feedback and Interpretation
<p>Action 26 (Full): The Government will explore creating a new post in the Civil Aviation Authority (CAA) with responsibility for providing neutral and objective advice for stakeholders and facilitating discussions to assist resolution of aviation safety concerns associated with proposed developments.</p>	<ul style="list-style-type: none">• Aviation Authority: Acknowledged a lack of sufficient surveillance experts to support the CAA and aerodromes. Also highlighted a need to better share existing expertise and advice and provide more guidance on performance assessments and safety case validation.• Airports: Called for involvement from a regulatory body (ideally CAA, maybe also DfT) to ensure neutrality and safety on mitigation assessments.• Consultant: Suggested that the CAA would benefit from having a dedicated multi-disciplinary wind farm team.• Government: Acknowledged the lack of CAA resource as a blocker, noting the need for funding with a clear remit to deal with wind farm tolerance and arbitrate between airports and developers, ensuring fairness and driving changes.• Energy, Airports, Consultants: Noted that unclear remit of CAA affect involvement in mitigation discussions <p>Interpretation: Stakeholders consistently identified a gap for neutral, expert, and well-resourced CAA involvement to provide objective advice and facilitate resolution of aviation safety concerns. A single CAA post/team could coordinate guidance and liaison with MoD (DAATM), subject to DfT/CAA senior support. Wind should be included in wider CAA/aviation forums to support constructive engagement.</p>

Theme 4: Aviation and Defence

Theme 4 commits to addressing radar and defence-related barriers through surveys, enhancing the CAA's and MoD's roles, and funding mitigation trials to reduce objections while maintaining safety.

Actions (Correspondence)	Corresponding Stakeholder Feedback and Interpretation
<p>Action 27 (Partial): The Government will review and publish updated CAP764 guidance and consider whether additional best practice guidance is required to aid interpretation.</p>	<ul style="list-style-type: none">• Energy: Highlighted that guidance on CAP documents (670, 760, 764, 1616) would help understanding issues better.• Consultants: Stated that the VHF interference methodology in CAP 670 needs to be reviewed, as it no longer reflects the reality of larger wind turbines.• ANSP: Reiterated that CAP 670's VHF assessment methodology is outdated, noting turbine heights now exceed the assumptions in the current guidance.• Aviation Authority: Mentioned that clearer and well-defined guidance is needed, particularly for smaller aerodromes that lack expertise. <p>Interpretation: While stakeholders referenced CAP 670 more frequently than CAP 764, there is a common concern that CAA guidance documents are outdated and need revision to reflect evolving wind turbine technology and aviation challenges. However, guidance remains non-regulatory and requires resourcing, prioritisation and an efficient update mechanism to remain current. Additionally, guidance should improve transparency for Probability of Detection (Pd) and VHF assessments.</p>

Theme 4: Aviation and Defence

Theme 4 commits to addressing radar and defence-related barriers through surveys, enhancing the CAA's and MoD's roles, and funding mitigation trials to reduce objections while maintaining safety.

Actions (Correspondence)	Corresponding Stakeholder Feedback and Interpretation
<p>Action 28 (Full): The Government will conduct a review of airspace regulations to consider options to require civil aerodromes to procure new primary surveillance radars that have wind farm mitigation capabilities.</p>	<ul style="list-style-type: none">• Consultant: Stated that all new surveillance systems should be wind farm tolerant. However, current radar products have varying levels of wind farm mitigation capability, but airports face significant financial implications in procurement.• Aviation Authority: Questioned whether a policy intervention is needed to ensure wind farm mitigation is built into new radar procurements.• Airport: Raised concerns that while radars are technologically advancing, the costs of wind farm mitigating radars are increasingly high, particularly affecting smaller airports.• Energy: Concerns were raised about which radars the MoD and NATS would accept, and the lack of incentives to upgrade, sometimes seeking to pass costs of planned radar replacements onto developers. <p>Interpretation: Stakeholders argued that new radars should by default include wind farm mitigation capabilities, and that policy intervention may be required to make this consistent across civil aerodromes. This would set a national baseline, while recognising local site/airspace-specific mitigation will still be required.</p>

Theme 4: Aviation and Defence

Theme 4 commits to addressing radar and defence-related barriers through surveys, enhancing the CAA's and MoD's roles, and funding mitigation trials to reduce objections while maintaining safety.

Actions (Correspondence)	Corresponding Stakeholder Feedback and Interpretation
<p>Action 29 (Full): The Government will explore the creation of a 'mitigation fund' to issue financial support to civil airports who require radar upgrades.</p>	<ul style="list-style-type: none"> • Airport: Suggested a centralised mitigation fund or team to manage wind farm–aviation mitigations, to ease commercial and resource pressures on airports. • Consultants: Noted the significant financial impact of radar upgrades, which not all airports can afford. Suggested that wind farms should pay demonstrable costs and highlighted the need for state intervention to arbitrate financial disagreements. Additionally, the idea of a recovery fund socialised across the industry was raised to cover additional infrastructure costs when developers exceed radar capacity. • Government: Acknowledged that the government is open to funding solutions, provided they are supported by business cases demonstrating clear value for money. • Energy: Suggested that wind farm developments could be framed as enablers of necessary radar upgrades, thereby strengthening the case for public funding. <p>Interpretation: There is strong alignment between stakeholder feedback and this action, highlighting the financial burden of radar upgrades and the need for a fair funding system. Stakeholders consistently emphasised that a centralised mitigation or recovery fund, supported by both government and developers, would be essential to overcome cost barriers and ensure timely deployment. This idea was further strengthened by the developers' perception of being framed as an enabler of infrastructure upgrades. However, the fund's aim, scope (CAPEX/OPEX), funding source and managing body must be defined to avoid bureaucracy and stakeholder pushback. Additionally, clear cost visibility would support consumer impact assessment.</p> <p>Stakeholders raised concerns regarding the allocation of mitigation costs. Wind industry stakeholders noted that costs are sometimes passed to developers for radar upgrades that were already planned and suggested that airports should remain responsible for the costs of planned replacements. This highlights the need for a trusted environment between wind developers and aviation stakeholders to agree a fair and mutually acceptable cost-sharing approach. Stakeholders also raised concerns regarding responsibility for enroute surveillance costs. In parallel, airport stakeholders highlighted that mitigation-driven adaptation costs can complicate regulated CAPEX/OPEX planning and expenditure approvals.</p>

Theme 4: Aviation and Defence

Theme 4 commits to addressing radar and defence-related barriers through surveys, enhancing the CAA's and MoD's roles, and funding mitigation trials to reduce objections while maintaining safety.

Actions (Correspondence)	Corresponding Stakeholder Feedback and Interpretation
Action 30 (NA): DESNZ will work with MoD and Scottish Government to implement an enduring solution to both unlock onshore wind capacity around Eskdalemuir seismic array and uphold necessary safeguarding.	<i>No evidence from stakeholder interviews.</i> Unlocking onshore wind capacity around Eskdalemuir seismic array extended beyond the scope of Aviation-Wind coexistence and wind farm mitigation discussions.
Action 31 (NA): DESNZ will work with MoD and Scottish Government to identify and implement an appropriate route to enforce the updated approach to Eskdalemuir seismic array.	<i>No evidence from stakeholder interviews.</i> Enforcing the updated approach to Eskdalemuir seismic extended beyond the scope of Aviation-Wind coexistence and wind farm mitigation discussions.

Summary of correspondence level to other DESNZ themes

The following table summarises the assessed level of correspondence (Full, Partial, Not Applicable) of DESNZ strategy themes and actions to stakeholder feedback. The full analysis of these theme areas is included in Appendix B.

Theme (Correspondence)	Summary
Theme 1 Site Selection, Preparation and Consenting (Moderate)	<ul style="list-style-type: none"> • Full: Stakeholders strongly support the need for additional training and resources to address the evident skills and capacity gaps across aviation authorities, airports, and government. • Partial: Broader calls for clearer guidance/policies, more strategic siting, stronger government leadership, streamlined planning, and more flexible consent timelines. • NA: Environmental assessment reforms, permitted development rights, and repowering.
Theme 2 Networks and System Planning (Minimal)	<ul style="list-style-type: none"> • Full: None • Partial: Calls for a centralised repository integrating safeguarding data, wind farm boundaries, and environmental constraints (aligning with strategic spatial/network planning). • NA: Grid connection reforms, network company obligations, transmission charging, and transformer charging.
Theme 3 Communities and public perception (Minimal)	<ul style="list-style-type: none"> • Full: None. • Partial: Calls for clearer, standardised engagement (briefing materials, structured negotiation, avoiding binary decisions, and transparency on NDAs), partially aligning with best-practice engagement. • NA: Grid connection reforms, network company obligations, transmission charging, and transformer charging.
Theme 5 Finance and Routes to Market (Minimal)	<ul style="list-style-type: none"> • Full: Strong support for a joint government–industry forum/pipeline to align efforts, reduce inefficiencies, and replace piecemeal approaches with a structured framework. • Partial: None. • NA: CfD, PPAs, and wider electricity market reforms.
Theme 6: Supply Chain, Skills and Workforce (Minimal)	<ul style="list-style-type: none"> • Full: None. • Partial: Noted shortage of CNS expertise to assess/verify aviation–wind VHF interference, indirectly aligning with workforce skills development. • NA: Supply chain/industrial strategy measures (incentives, recycling/circular economy, logistics, workforce monitoring, EDI targets).



4

Recommendations to enhance DESNZ Action Plan



Correspondence of recommendations to wider WP3 objectives

The recommendations stated in subsequent slides are summarised into nine categories to the left and demonstrate clear correspondence to the wider WP3 objectives to the right which includes the objectives stated in the Onshore Wind Sector deal and Onshore Wind Policy Statement.

Categories of recommendations

1. Establish clear top-down leadership and governance to align consenting and spatial planning, with aviation safeguarding embedded throughout.
2. Formalise early, structured cross-sector engagement between aviation, developers and regulators to surface safeguarding issues sooner.
3. Define transparent mitigation/objection processes supported by standardised approaches and templates.
4. Develop a central shared data repository to enable consistent analysis and improved transparency.
5. Ensure safeguarding assessments are timely, well-resourced and guided by consistent objection-handling principles to prevent delays.
6. Introduce independent, evidence-based mitigation and validation so mitigation performance evidence is trusted and reusable.
7. Provide policy direction on future long-term radar/CNS capability and strategy to align decisions with long-term requirements.
8. Set clear financial rules and sustainable funding mechanisms to reduce uncertainty and avoid ad hoc negotiations.
9. Strengthen cross-sector capability, skills and training (including CNS) and provide support to smaller operators.



Wider WP3 objectives

-  Net-zero economy transition and double the onshore wind energy by 2030.
-  Maintaining the integrity of the key national infrastructure of airspace to ensure the contribution of aviation to UK economy and innovation.
-  Develop a cooperative approach to reach a mutually accepted mitigation strategy through existing and established working groups such as the ADMB.
-  Establish a fair, consistent and transparent process to address issues and provide better guidance to better inform stakeholders and manage expectations to prevent unnecessary resource implications.
-  Establishing a central repository mechanism for environmental monitoring data.
-  Reduce the time for consents by increasing skills/resources and streamlining approaches.
-  Consider surveillance mitigation technologies and determine mitigation solutions consistent with operational and technical requirements.
-  Align onshore wind deployment with the requirements of the UK AMS and CNS technology development.
-  Develop an approach which reduces costs with a fair and equitable deployment and sufficient funding of aviation mitigation solutions.
-  Identify the skills needed to deliver the 2030 target and collaborate with training providers to enhance skills.

Overarching objectives

Recommendations

The following recommendations are suggested in addition to, and to enhance, the actions defined in the DESNZ Onshore Wind Taskforce Strategy. Each of the category corresponds to the two overarching objectives and one of the wider WP3 objectives.

Overarching objectives



Net-zero economy transition and double the onshore wind energy by 2030.



Maintaining the integrity of the key national infrastructure of airspace to ensure the contribution of aviation to UK economy and innovation.

Category 1

Establish clear top-down leadership and governance to align consenting and spatial planning, with aviation safeguarding embedded throughout.

- Establish top-down leadership to oversee the consenting process and ensure planning guidance documents are consistently applied.
- Ensure top-down leadership to coordinate spatial energy planning across sectors, embedding aviation safeguarding considerations alongside energy networks.
- Use lessons learnt from the current OWIC-funded MoD post to ensure the effectiveness of the new post responsible for strategic solutions to onshore wind turbine interference with air traffic control radar.



Wider WP3 objective



Develop a cooperative approach to reach a mutually accepted mitigation strategy through existing and established working groups such as the ADMB.

Category 2

Formalise early, structured cross-sector engagement between aviation, developers and regulators to surface safeguarding issues sooner.

- Improve cross-industry coordination, involving aviation stakeholders in the Strategic Spatial Energy Plan development.
- Establish a structured process for aviation stakeholder engagement to address safeguarding concerns and prevent potential planning delays.
- Introduce government-led initiatives and incentives to ensure active developer engagement in consultations, investment in wider community benefits and greater transparency through standardised frameworks.



Wider WP3 objectives



Develop a cooperative approach to reach a mutually accepted mitigation strategy through existing and established working groups such as the ADMB.



Establish a fair, consistent and transparent process to address issues and provide better guidance to better inform stakeholders and manage expectations to prevent unnecessary resource implications.

Recommendations

The following recommendations are suggested in addition to, and to enhance, the actions defined in the DESNZ Onshore Wind Taskforce Strategy. Each of the category corresponds to the two overarching objectives and one of the wider WP3 objectives.

Overarching objectives



Net-zero economy transition and double the onshore wind energy by 2030.



Maintaining the integrity of the key national infrastructure of airspace to ensure the contribution of aviation to UK economy and innovation.

Category 3

Define transparent mitigation/objection processes supported by standardised approaches and templates.

- Following the re-introduction of onshore wind in the NSIPs regime, clearly defined processes need to be in place to set out transparent means of negotiating acceptable mitigations and associated implementation action plans, enabling the industry to move away from binary decision-making.
- Provide a clear standard and guidance for assessing onshore wind impacts on aviation, to identify key issues and ensure a consistent approach to data gathering and information quality.



Wider WP3 objective



Establish a fair, consistent and transparent process to address issues and provide better guidance to better inform stakeholders and manage expectations to prevent unnecessary resource implications.

Category 4

Develop a central shared data repository to enable consistent analysis and improved transparency.

- Explore whether the proposed site selection tool can be expanded into a central repository incorporating aviation safeguarding maps, wind farm boundaries, and environmental constraints, to improve data transparency and support more efficient analysis. Training should also be provided to ensure that all relevant stakeholders can use the tool effectively.



Wider WP3 objective



Establishing a central repository mechanism for environmental monitoring data.

Recommendations

The following recommendations are suggested in addition to, and to enhance, the actions defined in the DESNZ Onshore Wind Taskforce Strategy. Each of the category corresponds to the two overarching objectives and one of the wider WP3 objectives.

Overarching objectives



Net-zero economy transition and double the onshore wind energy by 2030.



Maintaining the integrity of the key national infrastructure of airspace to ensure the contribution of aviation to UK economy and innovation.

Category 5

Ensure safeguarding assessments are timely, well-resourced and guided by consistent objection-handling principles to prevent delays.

- Introduce measures to prevent repeated expiration of planning permissions caused by unresolved aviation objections, by ensuring timely, well-resourced safeguarding assessments, standardised wind-aviation engagement and briefing packs, clearer processes for resolving objections, and clearer guidelines for assessing the acceptability of mitigation solutions.
- Develop methods to assess and manage the cumulative impacts of wind farm proliferation on aviation and defence, with particular attention to airspace management and IFPs.



Wider WP3 objective



Reduce the time for consents by increasing skills/resources and streamlining approaches.

Category 6

Introduce independent, evidence-based mitigation and validation so mitigation performance evidence is trusted and reusable.

- Establish an independent testing and validation system that would allow sharing of existing and future radar mitigation test and performance results with the Aviation and Wind industry.



Wider WP3 objective



Consider surveillance mitigation technologies and determine mitigation solutions consistent with operational and technical requirements.

Recommendations

The following recommendations are suggested in addition to, and to enhance, the actions defined in the DESNZ Onshore Wind Taskforce Strategy. Each of the category corresponds to the two overarching objectives and one of the wider WP3 objectives.

Overarching objectives



Net-zero economy transition and double the onshore wind energy by 2030.



Maintaining the integrity of the key national infrastructure of airspace to ensure the contribution of aviation to UK economy and innovation.

Category 7

Provide policy direction on future long-term radar/CNS capability and strategy to align decisions with long-term requirements.

- Provide policy guidance on the future role of PSR and its expected capabilities to ensure radar procurement decisions are based on long-term strategic planning.
- Develop a framework to provide clearer justifications and evidence for aviation and MoD objections that is based on the underlying requirements for use of PSR.
- Provide updated guidance on how to effectively assess the likelihood of wind farms having an operational impact on VHF communication services.



Wider WP3 objective



Align onshore wind deployment with the requirements of the UK AMS and CNS technology development.

Recommendations

The following recommendations are suggested in addition to, and to enhance, the actions defined in the DESNZ Onshore Wind Taskforce Strategy. Each of the category corresponds to the two overarching objectives and one of the wider WP3 objectives.

Overarching objectives



Net-zero economy transition and double the onshore wind energy by 2030.



Maintaining the integrity of the key national infrastructure of airspace to ensure the contribution of aviation to UK economy and innovation.

Category 8

Set clear financial rules and sustainable funding mechanisms to reduce uncertainty and avoid ad-hoc negotiations.

- Establish clear rules on definition of allowable mitigation cost and allocation of long-term mitigation costs to avoid disputes between developers and aviation stakeholders.
- Offer clarity on how the proposed central mitigation fund will be managed, what the source of funding will be, and which organisation will manage the fund, distinguishing between CAPEX and OPEX implications.
- Encourage structured industry-government forums to coordinate financial solutions and divert from piecemeal, case-by-case negotiations.
- Improve visibility of available financial support mechanisms and criteria, so developers and aviation stakeholders can plan mitigation solutions with greater certainty.



Wider WP3 objective



Develop an approach which reduces costs with a fair and equitable deployment and sufficient funding of aviation mitigation solutions.

Recommendations

The following recommendations are suggested in addition to, and to enhance, the actions defined in the DESNZ Onshore Wind Taskforce Strategy. Each of the category corresponds to the two overarching objectives and one/two of the wider WP3 objectives.

Overarching objectives



Net-zero economy transition and double the onshore wind energy by 2030.



Maintaining the integrity of the key national infrastructure of airspace to ensure the contribution of aviation to UK economy and innovation.

Category 9

Strengthen cross-sector capability, skills and training (including CNS) and provide support to smaller operators.

- Expand the Clean Energy Workforce Strategy to explicitly incorporate aviation CNS skills as part of the enabling workforce.
- Explore multi-disciplinary cross-sector training initiatives (CAA, MoD, airports, developers) and the development of standardised technical resources to address expertise gaps, strengthen technical capacity and to rapidly upskill any new entrants.
- Explore cost-effective measures for providing necessary technical expertise and resources to small airports for assessing impacts of wind farms and defining and managing acceptable mitigation solutions.



Wider WP3 objective



Identify the skills needed to deliver the 2030 target and collaborate with training providers to enhance skills.



Appendix A

Themes and questions used for stakeholder consultations

Themes and questions used for stakeholder consultations

Item	High-Level Theme	Question
1	Future airspace and surveillance infrastructure development	What will the future airspace and surveillance infrastructure look like?
2	Evolving role of PSR and other forms of surveillance	What will the role of PSR be? How will it evolve with increased use of cooperative surveillance?
3	Balancing stakeholder priorities across aviation and energy sectors	How should we balance the different priorities of the different stakeholders?
4	Challenges that need to be addressed by a long-term coexistence strategy	What are the main issues\challenges (current and future) that need to be addressed by a long-term coexistence strategy (technical, operational, economic, regulatory, policy)?
5	Existing mitigation solutions and their performance	What solutions exist today to mitigate the issues?
6	Feedback on WP1 findings, emerging solutions and expectation of wind farm mitigation to be an inherent part of newly purchased PSR	What is your general feedback on the WP1 market study, particularly around mitigation (e.g. missing solutions; solutions under development; direct exposure to mitigation solutions; wind farm solution being an inherent part of every purchased PSR)?
7	Best practice for mitigation	What does best practice mitigation look like

Themes and questions used for stakeholder consultations

Item	High-Level Theme	Question
8	Designing a UK-wide mitigation strategy with broader benefits	How can we design a UK approach to the implementation of mitigation solutions that can support the CNS infrastructure to provide wider mitigation beyond individual airport/specific wind turbine developments to provide wider area solutions (and potentially additional benefits)?
9	Cost-effectiveness and efficiency in identifying solutions	How can we ensure the identification and implementation of mitigations are cost effective and efficient?
10	Aviation and Wind Industry coordination	How can we ensure efficient coordination between aviation and wind industries as airspace design continues to evolve as part of the UK's AMS?
11	Improving clarity and usefulness of guidance material	What improvements can be made to guidance material to better inform and effectively manage the expectations of developers and added clarity for airports, Air Navigation Service Providers and developers in the planning process and avoid unnecessary resource implications for both aviation and the wind industry?
12	Ensuring Transparent fair and equitable processes	How do we ensure transparent, fair and equitable processes?



Appendix B

Detailed analysis on the stakeholder feedback alignment with DESNZ strategy (Theme 1-3, 5-6)

Theme 1: Site Selection, Preparation and Consenting

Theme 1 focuses on making the planning system more efficient by updating guidance, improving data and training, and consulting on permitted development rights to streamline applications.

Actions	Correspondence	Corresponding Stakeholder Feedback	Interpretation
Action 1: The Government will modernise the existing system of environmental assessments through the introduction of environmental outcomes reports and a nature restoration fund.	Not Applicable	<i>No evidence from stakeholder interviews.</i>	Environmental assessments and nature restoration initiatives extended beyond the scope of Aviation-Wind coexistence and wind farm mitigation discussions.
Action 2: The Government will scope a data tool to support with the identification of suitable sites for onshore wind and facilitate better transparency and engagement when assessing these sites.	Partial	<p>Airports: Acknowledged that a more strategic approach for wind farm siting may be beneficial for predefining areas with minimal impact on aviation.</p> <p>Energy: Suggested a national data repository combining aviation safeguarding maps, wind farm boundaries, and environmental constraints which was described as a “potentially transformative GIS tool”.</p> <p>Aviation Authorities: Mentioned a centralised pipeline of wind farm developments to manage workload and improve strategic planning.</p>	<p>Stakeholders did not explicitly discuss the need of a data tool for site selection, although some of them acknowledged that a more strategic approach to wind farm siting may improve assessment of areas with respect to aviation impact.</p> <p>The need for improved transparency and a centralised repository combining Aviation-wind farm related information was a recurring topic, which aligns with the transparency considerations mentioned in the action.</p>

Theme 1: Site Selection, Preparation and Consenting

Theme 1 focuses on making the planning system more efficient by updating guidance, improving data and training, and consulting on permitted development rights to streamline applications.

Actions	Correspondence	Corresponding Stakeholder Feedback	Interpretation
Action 3: The Government will consider the role that Great British Energy (GBE) can play in supporting development opportunities.	Partial	Energy, Consultants, Government: Raised concerns about capital constraints and unclear breakdown of mitigation costs. Developers would usually agree to compensate one-time mitigation costs.	Despite GBE not being mentioned in the discussions, stakeholders raised the need for stronger government leadership and funding support, to prevent developers from paying for long term maintenance and updates.
Action 4: The Government will re-introduce onshore wind into the Nationally Significant Infrastructure Projects (NSIPs) regime with an updated threshold of 100MW.	Partial	Airports, Military: Discussed planning challenges and delays caused by regulators and binary decision-making process without any negotiation. Government: DESNZ taking a more active role in onshore wind strategy.	While the re-introduction of onshore wind in NSIPs was not a discussion topic, stakeholders raised planning challenges and regulatory delays which may be streamlined, as a result of this action, for large scale developments of 100MW. There are also early signs of improved DESNZ involvement with changing UK policy.
Action 5: The Government will launch a consultation on permitted development rights for onshore wind.	Not Applicable	<i>No evidence from stakeholder interviews.</i>	Consultation of permitted development rights and alternative forms of small-scale onshore wind deployment extended beyond the scope of Aviation-Wind coexistence and wind farm mitigation discussions.

Theme 1: Site Selection, Preparation and Consenting

Theme 1 focuses on making the planning system more efficient by updating guidance, improving data and training, and consulting on permitted development rights to streamline applications.

Actions	Correspondence	Corresponding Stakeholder Feedback	Interpretation
Action 6: The Government will signal the availability of longer-term operational consent timelines for onshore wind and flexibility in the commencement of development period, for projects developing under the Town and Country Planning Act 1990.	Partial	Energy: Expressed frustration with current case-by-case negotiations regarding aviation impacts, despite decades of experience.	The stakeholders did not explicitly discuss operational consent timelines and the Town and Country Planning Act 1990 but briefly touched on the inflexibility of the industry, which may be addressed through this action.
Action 7: The Government will update planning policy and guidance that is used throughout the planning system.	Partial	Energy: Highlighted that guidance on CAP documents (670, 760, 764, 1616) would help understanding issues better. ANSP, Consultants: Agreed that VHF interference methodology under CAP 670 is outdated and needs to be reviewed in light of increasing turbine blades. Energy, Government, Consultants, Aviation Authorities: Discussed that some entities may lack experience in the field and that guidance from aviation authorities requires further clarity and consistency.	Stakeholders emphasised that clearer, updated and more consistent policies and guidance are required to address Aviation-Wind conflicts and to ensure that responsibilities are applied proportionately. This in turn should support a more efficient planning process. Most existing documents and guidance are viewed as outdated contributing to inefficiency.

Theme 1: Site Selection, Preparation and Consenting

Theme 1 focuses on making the planning system more efficient by updating guidance, improving data and training, and consulting on permitted development rights to streamline applications.

Actions	Correspondence	Corresponding Stakeholder Feedback	Interpretation
Action 8: The Government will provide training and resource support to local planning authorities and statutory consultees in assessing applications.	Full	<p>Airports, Energy: Airports often face resource constraints and perceive limited direct benefits, which reduce their incentive to initiate discussions or collaborate with developers on the application process.</p> <p>Airports, Aviation Authority, Military: Highlight lack of relevant expertise in the field (testing, verification, procurement, mitigation) and resourcing shortage.</p>	There is generally consensus amongst stakeholders that organisations are under-resourced and that training, clearer guidance and skilled support would be of significant benefit to improving wind farm application processes and industry effectiveness and consistency.
Action 9: The Government will deliver planning policy guidance to support the repowering and lifetime extension of existing sites.	Not Applicable	<i>No evidence from stakeholder interviews.</i>	Repowering and lifetime extension of existing sites extended beyond the scope of Aviation-Wind coexistence and wind farm mitigation discussions, which focused on new developments.

Summary of Theme 1

Stakeholder feedback from Onward 2030 discussions showed **moderate correspondence** to this theme, as shown in the table below. Stakeholders strongly supported clearer guidance and more resources, while raising partial points leadership and flexibility. Several of the government’s proposed measures, however, were not discussed at all, as they extended beyond the aviation–wind coexistence and mitigation focus of the interviews.

Correspondence	Actions
Full	8
Partial	2, 3, 4, 6, 7
Not Applicable	1, 5, 9

Full Correspondence



Stakeholders strongly supported the need for additional training and resources to address the evident skills and capacity gaps across aviation authorities, airports, and government bodies.

Partial Correspondence



Stakeholders supported the general need for updated guidance and clearer policies that would support the planning process. Stakeholders recognised the importance of more strategic siting, stronger government leadership, streamlined planning processes, and more flexible consent timelines. However, stakeholders often framed these as broader concerns rather than direct references to the government’s proposed actions.

No Correspondence



Certain measures, such as environmental assessment reforms, permitted development rights, and repowering of existing sites, were not discussed by stakeholders, as these fell outside the Aviation–Wind coexistence and mitigation focus of the interviews.

Theme 2: Networks and System Planning

Theme 2 centres on reforms to grid connections and system planning to accelerate build-out and align infrastructure with low-carbon generation through a Strategic Spatial Energy Plan.

Actions	Correspondence	Corresponding Stakeholder Feedback	Interpretation
Action 10: The Government will work with Ofgem, NESO and network companies to continue to progress radical connections reform.	Not Applicable	<i>No evidence from stakeholder interviews.</i>	Energy system regulation and grid network connection extended beyond the scope of Aviation-Wind coexistence and wind farm mitigation discussions.
Action 11: Ofgem will consider sharper obligations and incentives on network companies to hold them to account for changes in connection costs and timescales.	Not Applicable	<i>No evidence from stakeholder interviews.</i>	Grid connection and network obligations extended beyond the scope of Aviation-Wind coexistence and wind farm mitigation discussions.
Action 12: Ofgem and Government will explore options for providing certainty on Transmission Network Use of System (TNUoS) charges for generators.	Not Applicable	<i>No evidence from stakeholder interviews.</i>	Transmission charging extended beyond the scope of Aviation-Wind coexistence and wind farm mitigation discussions.

Theme 2: Networks and System Planning

Theme 2 centres on reforms to grid connections and system planning to accelerate build-out and align infrastructure with low-carbon generation through a Strategic Spatial Energy Plan.

Actions	Correspondence	Corresponding Stakeholder Feedback	Interpretation
Action 13: Ofgem and network companies will continue to review charging arrangements for supergrid transformers.	Not Applicable	<i>No evidence from stakeholder interviews.</i>	Charging arrangements for supergrid transformers extended beyond the scope of Aviation-Wind coexistence and wind farm mitigation discussions.
Action 14: DESNZ, NESO, Ofgem will deliver the strategic spatial energy plan and centralised strategic network plan.	Partial	Energy: Suggested a national data repository combining aviation safeguarding maps, wind farm boundaries, and environmental constraints.	Stakeholders did not explicitly reference the Strategic Spatial Energy Plan (SSEP), however the idea of a centralised repository for Aviation-Wind related data partially overlaps with this action.

Summary of Theme 2

Stakeholder feedback from Onward 2030 discussions showed **minimal correspondence** to this theme, as shown in the table below. Most of the proposed measures around network reform, charging, and regulatory obligations were not discussed by stakeholders, though there was some limited overlap with the idea of improved data and planning at a system-wide level.

Correspondence	Actions
Full	-
Partial	14
Not Applicable	10, 11, 12, 13

Full Correspondence



No stakeholder feedback fully corresponded to actions from this theme.

Partial Correspondence



Stakeholders suggested a centralised repository combining aviation safeguarding data, wind farm boundaries, and environmental constraints, which partially reflects the government's commitment to centralised and strategic spatial and network planning.

No Correspondence



Issues such as radical connections reform, obligations on network companies, transmission charging, and charging arrangements for transformers were not mentioned, as these topics fell outside the scope of Aviation-Wind coexistence and mitigation discussions.

Theme 3: Communities and Public Perception

Theme 3 introduces measures to build trust with local communities by embedding best practice engagement, updating community benefits guidance, and running regional communications campaigns.

Actions	Correspondence	Corresponding Stakeholder Feedback	Interpretation
Action 15: The Government will formally embed best practice principles of engagement into planning guidance in England to ensure that pre-application consultation is undertaken to the highest standards.	Partial	<p>Airports: Highlighted the need for a clearer and standardised “briefing pack” explain aviation impacts and expectations consistently across projects.</p> <p>Military: Criticised current binary decision-making and called for a more structured negotiation of potential compromises.</p> <p>Energy, Consultants: NDAs are seen as a barrier to transparency and coexistence to aviation, hindering development progress and discussions.</p>	Stakeholders strongly state the underlying need for high-quality, standardised, transparent, and consistent engagement in pre-application processes. While this action revolves around community engagement, there is some partial overlap with the stakeholder discussions.
Action 16: The Government will consider mandating for the provision of community benefits in Great Britain.	Not Applicable	<i>No evidence from stakeholder interviews.</i>	Community benefit extended beyond the scope of Aviation-Wind coexistence and wind farm mitigation discussions.
Action 17: The Government will publish an update to the 2014 Community Benefits Protocol and formally adopt it as government guidance for England.	Not Applicable	<i>No evidence from stakeholder interviews.</i>	Community benefit guidance extended beyond the scope of Aviation-Wind coexistence and wind farm mitigation discussions.

Theme 3: Communities and Public Perception

Theme 3 introduces measures to build trust with local communities by embedding best practice engagement, updating community benefits guidance, and running regional communications campaigns.

Actions	Correspondence	Corresponding Stakeholder Feedback	Interpretation
Action 18: The Government will review the 2015 Community Electricity Right.	Not Applicable	<i>No evidence from stakeholder interviews.</i>	Community Electricity Right extended beyond the scope of Aviation-Wind coexistence and wind farm mitigation discussions.
Action 19: GBE will support locally owned renewable electricity projects through delivery of the Local Power Plan.	Not Applicable	<i>No evidence from stakeholder interviews.</i>	GBE and Local Power Plan extended beyond the scope of Aviation-Wind coexistence and wind farm mitigation discussions.
Action 20: The Government will publish a net zero public participation strategy.	Not Applicable	<i>No evidence from stakeholder interviews.</i>	Net zero public participation strategy extended beyond the scope of Aviation-Wind coexistence and wind farm mitigation discussions.
Action 21: Delivery of targeted, strategic regional communications campaigns.	Not Applicable	<i>No evidence from stakeholder interviews.</i>	Local community communication extended beyond the scope of Aviation-Wind coexistence and wind farm mitigation discussions.

Summary of Theme 3

Stakeholder feedback from Onward 2030 discussions showed **minimal correspondence** to this theme, as shown in the table below. While there was clear recognition of the need for more structured and transparent engagement processes, most of the government’s proposed community benefit measures were not addressed by stakeholders, as they fell outside the Aviation–Wind focus of discussions.

Correspondence	Actions
Full	-
Partial	15
Not Applicable	16, 17, 18, 19, 20, 21

Full Correspondence



No stakeholder feedback fully corresponded to actions from this theme.

Partial Correspondence



Stakeholders highlighted the importance of clearer, standardised engagement processes, with calls for briefing materials, structured negotiation to avoid binary decision-making, and greater transparency around the use of NDAs. While not directly related to Communities and Public Perception, these points align in part with the government’s emphasis on embedding best practice engagement.

No Correspondence



Issues such as radical connections reform, obligations on network companies, transmission charging, and charging arrangements for transformers were not mentioned, as these topics fell outside the scope of Aviation–Wind coexistence and mitigation discussions.

Theme 5: Finance and Routes to Market

Theme 5 addresses how onshore wind projects access finance and markets, including establishing a joint government–industry subgroup and progressing reforms to the Contracts for Difference scheme.

Actions	Correspondence	Corresponding Stakeholder Feedback	Interpretation
<p>Action 32: The Government will establish a joint industry-government 2030 pipeline and delivery group with the aim to improve how government can recognise and respond to key barriers to deployment across the UK.</p>	Full	<p>Energy: Aviation issues are still handled case-by-case, creating repeated blockers and inefficiencies.</p> <p>All: Called for a national strategic approach of some for, such as a centralised authority, formal framework to coordinate DfT, DESNZ, MoD CAA on aviation-wind issues.</p> <p>Consultants, Airports: Proposed the idea of a central mitigation fund that could be socialised across the industry to reduce commercial pressure on smaller airports and distribute mitigation costs.</p>	All stakeholders called for a structured, joint forum or pipeline to align government and industry requirements, address systemic barriers and replacing the piecemeal approach with a more strategic framework.
<p>Action 33: The Government will publish its response to the Contracts for Difference (CfD) allocation round 7 consultation.</p>	Not Applicable	<i>No evidence from stakeholder interviews.</i>	CfD allocation extended beyond the scope of Aviation-Wind coexistence and wind farm mitigation discussions.

Theme 5: Finance and Routes to Market

Theme 5 addresses how onshore wind projects access finance and markets, including establishing a joint government–industry subgroup and progressing reforms to the Contracts for Difference scheme.

Actions	Correspondence	Corresponding Stakeholder Feedback	Interpretation
Action 34: National Wealth Fund to explore supporting onshore wind Power Purchase Agreements (PPAs).	Not Applicable	<i>No evidence from stakeholder interviews.</i>	PPAs extended beyond the scope of Aviation-Wind coexistence and wind farm mitigation discussions.
Action 35: The Government will issue an update on reformed national and zonal pricing proposals in Review of Electricity Market Arrangements (REMA), including treatment of legacy and transitional assets, and continue to work with industry on policy development.	Not Applicable	<i>No evidence from stakeholder interviews.</i>	Electricity market arrangements and pricing reforms extended beyond the scope of Aviation-Wind coexistence and wind farm mitigation discussions.

Summary of Theme 5

Stakeholder feedback from Onward 2030 discussions showed **minimal correspondence** to this theme, as shown in the table below. While there was one clear area of correspondence around the need for a coordinated, strategic forum to address systemic barriers, most other measures on financing mechanisms and market reforms were not discussed.

Correspondence	Actions
Full	32
Partial	-
Not Applicable	33, 34, 35

Full Correspondence



Stakeholders strongly supported the creation of a joint forum or pipeline to align government and industry, reduce inefficiencies, and replace piecemeal approaches with a structured framework.

Partial Correspondence



No stakeholder feedback partially corresponded to actions from this theme.

No Correspondence



Proposals related to the Contracts for Difference scheme, Power Purchase Agreements, and electricity market reforms were not raised by stakeholders, as these topics fell outside the scope of Aviation–Wind mitigation discussions.

Theme 6: Supply Chain, Skills and Workforce

Theme 6 seeks to strengthen the evidence base on industrial capacity and skills by researching supply chain opportunities and supporting industry-led workforce monitoring.

Actions	Correspondence	Corresponding Stakeholder Feedback	Interpretation
Action 36: The Government will work with RenewableUK to conduct a supply chain capability analysis for onshore wind.	Not Applicable	<i>No evidence from stakeholder interviews.</i>	Supply chain capability analysis extended beyond the scope of Aviation-Wind coexistence and wind farm mitigation discussions.
Action 37: The Government will consider expanding the Clean Industry Bonus to support onshore wind supply chain investment in the UK.	Not Applicable	<i>No evidence from stakeholder interviews.</i>	The Clean Industry Bonus and support to onshore wind supply chain investment extended beyond the scope of Aviation-Wind coexistence and wind farm mitigation discussions.
Action 38: The Government will include onshore wind in the industrial strategy.	Not Applicable	<i>No evidence from stakeholder interviews.</i>	Manufacturing and wider benefits to key UK industries extended beyond the scope of Aviation-Wind coexistence and wind farm mitigation discussions.
Action 39: The Government will monitor and consider actions related to component transportation and construction.	Not Applicable	<i>No evidence from stakeholder interviews.</i>	Logistics, transport and component construction challenges extended beyond the scope of Aviation-Wind coexistence and wind farm mitigation discussions.

Theme 6: Supply Chain, Skills and Workforce

Theme 6 seeks to strengthen the evidence base on industrial capacity and skills by researching supply chain opportunities and supporting industry-led workforce monitoring.

Actions	Correspondence	Corresponding Stakeholder Feedback	Interpretation
Action 40: The Government will support the development of the recycling and circular economy sector.	Not Applicable	<i>No evidence from stakeholder interviews.</i>	Recycling of turbine materials and circular economy extended beyond the scope of Aviation-Wind coexistence and wind farm mitigation discussions.
Action 41: The Government will publish the Clean Energy Workforce Strategy and explore options for boosting skills and delivering on the needs of the onshore wind industry.	Partial	Aviation Authority, Airports: Noted a lack of CNS expert knowledge, to assess and verify aviation-wind related issues affecting VHF communications.	Although CNS expertise is not explicitly referenced in the DESNZ strategy, it can reasonably be considered part of the wider skills needed within the onshore wind workforce, particularly for VHF interference assessment.
Action 42: Industry will conduct new workforce monitoring to provide demographic data, from which appropriate targets will be set.	Not Applicable	<i>No evidence from stakeholder interviews.</i>	The level of Diversity, Equality and Inclusivity of the onshore wind workforce extended beyond the scope of Aviation-Wind coexistence and wind farm mitigation discussions.

Summary of Theme 6

Stakeholder feedback from Onward 2030 discussions showed **minimal correspondence** to this theme, as shown in the table below. Most measures on supply chain resilience, circular economy, and workforce monitoring were not addressed by stakeholders, with only a partial link made to the need for specialist expertise.

Correspondence	Actions
Full	-
Partial	41
Not Applicable	36, 37, 38, 39, 40, 42

Full Correspondence



No stakeholder feedback fully corresponded to actions from this theme.

Partial Correspondence



Stakeholders highlighted the shortage of CNS expertise to assess and verify aviation–wind related VHF interference, which may align indirectly with government’s broader focus on workforce skills development.

No Correspondence



Proposals related to supply chain capability, investment incentives, inclusion in the industrial strategy, recycling and circular economy, transportation and logistics, workforce monitoring, and equality and diversity targets were not raised, as these extended beyond the Aviation–Wind mitigation focus of the interviews.



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