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Establishing Offshore Wind Dedicated Taskforce within Defence Departments: Global Case Studies

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Publication Date	**November 2025**
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Design	**sometype**

Solutions for Our Climate (SFOC) is an independent nonprofit organization that works to accelerate global greenhouse gas emissions reduction and energy transition. SFOC leverages research, litigation, community organizing, and strategic communications to deliver practical climate solutions and build movements for change.

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1. Introduction

Energy security is integral to national security, as both the expansion of renewable energy and the assurance of a stable energy supply are critical to sustaining the functions of a national system. Offshore wind power offers several advantages: it provides a reliable source of energy unaffected by geopolitical disruptions; mitigates vulnerabilities in the onshore power grid through the distributed siting of wind farms in coastal waters; and carries strategic significance as a decentralized energy resource in emergencies. Since a dependable energy supply is also vital to military operations, many countries are increasingly pursuing renewable energy transitions while enhancing their energy self-sufficiency. The Ministry of National Defense of the Republic of Korea should likewise broaden its role as a key stakeholder in balancing energy security with military operational capability in the process of offshore wind deployment. Some initial steps in this direction are already beginning to take shape within the institutional framework.

With the recent enactment of the Special Act on the Promotion of Offshore Wind Power Distribution and Industrial Development ("OSW Promotion Act"), offshore wind power is emerging as a central element of the national energy transition and efforts toward carbon neutrality. Under the government-led zoning system introduced in the Act, the Ministry of National Defense (MND) is to participate from the early stages of site selection to help coordinate offshore wind projects. This institutional framework provides a safeguard against potential conflicts between wind power development and military operations, positioning the MND not only as a regulatory reviewer but also as a strategic coordinating body in the advancement of offshore wind power.

Under the current framework, the MND typically conducts the operationality review at the final stage of a project, with limited consideration of technical alternatives to address military concerns. As a result, communication has been largely one-directional — closer to after-the-fact notifications than substantive dialogue. In the absence of clear guidelines on technical adjustments or alternative siting options, the military's feedback is often limited to either rejection or conditional acceptance. Consequently, project developers are left to manage the uncertainties and shoulder the burden of identifying workable resolutions through dialogue, frequently resulting in prolonged delays or even project cancellations.

These issues arise because private entities alone cannot resolve the problems that emerge during project development as they face structural limitations stemming from factors such as the confidentiality and complexity of military operations. The MND must therefore go beyond merely raising concerns about the potential impact of wind farms on its operational capacity and provide substantive, concrete technical advice, which requires strengthening its analytical expertise and reinforcing its consultative body. In addition, a dedicated consultative body or a technical review channel should be established to ensure that communication and coordination between developers and the military remain coherent and efficient.

Conflict between offshore wind projects and military operations is not unique to Korea but also present in the United States, the United Kingdom, and other countries with offshore wind deployment. These countries have addressed the issue by establishing dedicated bodies within their defense departments, thereby institutionalizing a civil-military consultative system and formulating a conflict-mitigation model. This precedent carries important implications for Korea. This brief examines global cases relevant to coordination between offshore wind development and military operations as well as the role and functioning of dedicated consultative bodies within defense departments.

2. UK

Case #1. UK's Safeguarding Framework

Advancing Civil-Military Coordination with the Safeguarding Framework[1]

The UK Ministry of Defence introduced the Safeguarding framework in 2002 to systematically address the impact of expanding private development projects on military operations. Under this system, projects such as wind farm development are evaluated from the earliest planning stages for their potential impact on national defense capabilities with solutions explored as necessary to ensure coexistence.

The overall management of the framework is overseen by the Defence Infrastructure Organisation (DIO)[i] under the UK Ministry of Defence (MOD). Within DIO, the Safeguarding Team — an expert technical unit — leads working-level discussions. The DIO, responsible for assessing and managing the impacts of offshore wind development on military operations, aerodrome, and radars, also oversees the management of data related to military infrastructure and bases.

The Safeguarding Team — central to the framework — oversees key functions such as conducting prior consultations with developers, requesting impact simulations, and issuing technical guidelines. Where necessary, the team may escalate matters to higher-level discussions, or the DIO may determine that a policy response is required. As a statutory consultee, the team works closely with stakeholders in sectors such as military operations, aviation, and telecommunications to assess potential impacts on the MOD's operational capability. It then submits a statement of the MOD's position on development proposals within 30 days.

Before the official launch of the Safeguarding framework, the UK Ministry of Defence (MOD) was broadly opposed to windfarm development, and in most cases projects proceeded without prior consultation with stakeholders such as the Department of Business and Trade (DBT) and project developers. This often resulted in friction during the planning stages of offshore projects and contributed to delays in resolution. To address this structural challenge, the DBT established the Wind Energy, Defence and Civil Aviation Working Group in 2001, which issued a temporary safeguarding guideline the following year. This guideline marked the beginning of an institutionalized consultation process with the MOD and aviation authorities. The Safeguarding framework further

i An organization within the UK MOD responsible for planning, managing, and operating defence infrastructure such as military facilities, training grounds, and airbases as well as leading negotiations with private developers.

laid the groundwork for a more systematic pre-consultation process starting from the earliest stages of site selection for wind development.

Specialized Working Groups:

Strengthening Civil–Military Cooperation through a Structured Approach [2]

The Safeguarding framework is managed by a dedicated team, the Safeguarding team, supported by specialized teams. The dedicated team conducts pre-consultations with stakeholders, including developers and local governments, to identify potential impacts on military operations in advance, review relevant technical issues, and mediate between parties. Each teams, each drawing on their specialized expertise, operate in close coordination with one another. For example, the Wind Energy Team — comprising experts in wind, aviation, and planning — assesses the impact of windfarm development on military operations and collaborates with project developers from the earliest stages. The Statutory and Offshore Team leads statutory consultations and evaluates the implications of offshore development for defense. The Engagement Team manages further negotiations when initial discussions fail to reach agreement and, if necessary, escalates the matter to higher levels, including participation in public inquiries.

This organizational structure built around functional teams rather than a single department facilitates case-by-case assignment of functional responsibilities and fosters constructive dialogue with developers and government bodies. It minimizes conflicts among stakeholders and reduces financial and social costs by preventing potential adverse effects of offshore projects on military operations. Moreover, the systematic framework streamlines civil-military coordination and negotiation processes, thereby enhancing the overall effectiveness of coordination.

MOD-led Technology Development for Sustainable Coexistence [3]

The Safeguarding framework serves as the Ministry of Defence's (MOD) strategic mechanism of coming up with resolutions through consultation to ensure coexistence of offshore development and military operations. Its purpose extends beyond site selection review to the provision of effective, technology-driven solutions. The technical guidelines issued under the framework are not merely administrative standards but the outcome of MOD-led technological development. For example, through the Windfarm Mitigation for UK Air Defence program, the Defence and Security Accelerator (DASA) has been advancing technologies designed to reduce interference between offshore infrastructure and air defense radars. This program provides a technological foundation for the Safeguarding framework, enabling the dedicated team to deliver practical, technology-based consultations to project developers.

The program, with a budget of approximately £20 million, brings together the Ministry of Defence (MOD), the Royal Air Force (RAF), the Defence Science and Technology Laboratory (DstI), and the Department for Business, Energy and Industrial Strategy (BEIS)[ii] among others. Its key areas of development include technologies to mitigate radar interference, signal processing, and AI-based aircraft identification, which are validated and subsequently integrated into the Safeguarding framework.

Ensuring Collaborative Foundations through Financial Mechanisms [4]

The financial structure of the Safeguarding framework is designed to ensure both system sustainability and effective public-private collaboration. The UK Ministry of Defence (MOD) allocates funding to the framework through its infrastructure budget, representing approximately 10% of the total MOD budget, and receives additional contributions from the Aviation Investment Fund Company Limited (AIFCL). The AIFCL, a private fund jointly financed by wind energy developers, supports initiatives led by the MOD and the Civil Aviation Authority (CAA) including the development of technologies to mitigate aviation and radar interference, the deployment of surveillance gap-filler infrastructure, and pilot projects. For example, the AIFCL contributed approximately £30 million to a matched-funding initiative with the MOD for the installation of new gap-filler radars.

The structure is significant as it enabled systematic public-private collaboration and established a sustainable financial model that underpins the stable operation of initiatives, including the development of technologies to mitigate impact on radar systems. Furthermore, by ensuring transparency and accountability in funding, it reduced potential uncertainties in civil-military collaborations and reinforced trust among stakeholders.

ii As part of a broader cabinet reshuffle in 2023, the Department for Business, Energy and Industrial Strategy (BEIS) was divided into three new departments: the Department for Energy Security and Net Zero (DESNZ), the Department for Science, Innovation and Technology (DSIT), and the Department for Business and Trade (DBT).

Case Study: The Walney Extension Wind Farm [5]

The Walney Extension Wind Farm, located off the northwest coast of England with a total capacity of 659 MW, engaged in technical consultations with the Defence Infrastructure Organisation (DIO)[iii] of the Ministry of Defence (MOD) from the early stages of development to mitigate potential impacts on military operations. Given concerns that turbine rotation could generate false targets on Royal Air Force radar, the developer received simulation guidelines from the DIO during the pre-application engagement and conducted advance assessments of possible radar interference. During the formal safeguarding consultation, the MOD noted that the impact assessment lacked sufficient quantitative data, and requested additional technical submissions, including line-of-sight analysis. The Ministry also issued further guidance, based on which the developer adjusted turbine placement and provided supplementary materials such as radar impact assessments and visibility studies.

Both parties subsequently signed a joint agreement reflecting the revised design and conditions for cooperation, leading the MOD to officially withdraw its objection to the project. This case demonstrates how the safeguarding mechanism enables practical negotiation between offshore wind developers and the military, covering impact assessment, design adjustment, and formal agreement, while maintaining a balance between operational security and the need for offshore wind development.

iii The Walney Extension was developed in the mid-2010s, during the period when large-scale offshore wind projects were rapidly expanding in the UK. At the time, there had been no precedent of offshore wind affecting military surveillance radar, and the Safeguarding team alone could not manage the coordination. As a result, the Defence Infrastructure Organisation, as the policy authority, took direct action.

3. US

Case 2: Clearinghouse, US Department of Defense (DoD) Offshore Wind Coordination Body

A Single Window for Efficient Civil-Military Offshore Wind Cooperation [6]

The United States established the DoD Siting Clearinghouse[iv] in 2011 to prevent conflicts between private renewable energy development and military operations, and to build an efficient civil–military coordination framework. The Clearinghouse serves as both a review committee — assessing the operational impacts of offshore wind projects — and a single window coordinating communication among developers, federal agencies, and state governments. It has played a pivotal role in mitigating potential risks and improving the predictability of permitting processes.

The Clearinghouse was created in response to challenges faced at Travis Air Force Base, a key strategic transport hub located in a region of expanding wind development. Concerns were raised that turbine rotation could create false targets on surveillance radar and interfere with low-altitude training zones. At the time, there was no official body to manage negotiations between developers and the military, limiting the Department of Defense's ability to provide consistent policy responses.

To address these issues, the U.S. Air Force entered into a Cooperative Research and Development Agreement (CRADA) with private developers and local stakeholders. Using simulation models, they quantified turbine interference effects, while software upgrades improved radar accuracy and eliminated false targets. An independent validation process followed, enabling the Department to formally withdraw its objections to the project. This became a benchmark case illustrating how military operational integrity and renewable energy development can coexist. It also underscored the need to manage such conflicts structurally rather than through ad hoc technical fixes, which ultimately led to the establishment of the Clearinghouse.

By creating a single window for review, the Department of Defense centralized its assessment of renewable energy projects. Previously, individual branches of the Department had engaged separately with agencies such as the Federal Aviation Administration and the Bureau of Ocean Energy Management, often leading to delays, unclear accountability, and misinterpretations. With the establishment of the Clearinghouse, all civil–military consultations were consolidated, greatly

iv The name changed to Military Aviation and Installation Assurance Siting Clearinghouse in 2018.

enhancing policy consistency, administrative efficiency, and the transparency and predictability of permitting process. Importantly, this framework has enabled strategic military requirements to be incorporated into renewable energy projects from the earliest design stages, fostering a model of constructive coexistence.

Comprehensive Coordination Platform for Stakeholder Discussions [7]

The Clearinghouse serves as a comprehensive platform that encompasses effective negotiation, coordination, and dispute resolution. By tailoring consultation structures to reflect the complexities of civil–military engagement, it plays a key role in generating practical policy outcomes. Its review process consists of two stages: the Informal Review and the Formal Review. The Informal Review, while not legally binding, takes place before the formal stage and provides an opportunity to adjust project design and agree on mitigation measures in advance. This process helps prevent conflicts early on and ensures that military operational requirements are incorporated into offshore wind projects from the initial planning phase.

Moreover, the Clearinghouse holds regular working-level meetings and shares technical data with federal agencies such as the Federal Aviation Administration (FAA), the Bureau of Ocean Energy Management (BOEM), and the Department of Homeland Security (DHS). In particular, it conducts close consultations on Wind Energy Areas[v] designated by BOEM, thereby minimizing potential conflicts between offshore wind siting and military operational zones. The Clearinghouse also contributes to building local acceptance by engaging with state governments and organizing community briefings and public hearings for residents and the fishing industry.

Serving as a Technological and Financial Hub to Strengthen Coordination [8]

In addition to coordinating stakeholder engagement, the Clearinghouse also provides the technological and financial foundations needed to support its review and strategic coordination functions. In 2014, the DoD worked with federal agencies — including the Department of Energy (DOE), the Federal Aviation Administration (FAA), and the National Oceanic and Atmospheric Administration (NOAA) — to establish the Wind Turbine Radar Interference Mitigation Working Group (WTRIM WG). This group has developed technologies to reduce the risks that wind turbines pose to both military and civilian radar systems. One example is the IQ RAG algorithm, which identifies radar reflections and

v A Wind Energy Area refers to offshore zones, selected from among Call Areas-designated by the U.S. Bureau of Ocean Energy Management as suitable for development following stakeholder consultations and analysis. Projects are reviewed based on these designated areas, which are structurally similar to the government-led zoning system to be introduced in Korea under the Special Act on the Promotion of Offshore Wind Power Distribution and Industrial Development.

interference patterns created by turbine blades and suppresses false signals. Its effectiveness has been validated through field trials, confirming its real-world applicability. The Clearinghouse shares such technologies with developers and encourages their integration into project design, helping to provide practical solutions from the outset.

The Clearinghouse is financed through the DoD's annual budget, with research and development supported under the Department's Research, Development, Test, and Evaluation (RDT&E) program. This institutionalized funding structure ensures that its mission can be pursued consistently. For specific projects, additional resources may also come from private developer investment or congressional funding authorization. This stable financial foundation enables the Clearinghouse to maintain long-term policy engagement, sustain civil-military coordination, and ensure that new technologies deliver effective results.

[Table 1] Comparison of the UK and US Frameworks

United Kingdom (Safeguarding)		United States (Clearinghouse)
2002	Establishment	2011
A coordination framework for reviewing the impact on military operations and facilitating discussions on impact mitigation through technology	Role	A single point of contact for reviewing private-sector development impacts on military operations and coordinating between developers and the military
• Overseen by the Defence Infrastructure Organisation (DIO) under the UK Ministry of Defence (MOD) • Operated by a dedicated team supported by specialized teams	Organization Structure	• Overseen by the U.S. Assistant Secretary of Defense for Energy, Installations, and Environment • Functions as the military's single window for offshore wind-related engagement
Early-stage coordination with developers to assess impacts on military operations	Initial Siting Review	Two-step preliminary review process to negotiate mitigation measures
Windfarm Mitigation for UK Air Defence program • Developed by the Defence and Security Accelerator (DASA) under MOD; forms the technological basis of the Safeguarding framework	Offshore Wind R&D	Wind Turbine Radar Interference Mitigation Working Group • Joint development of radar interference mitigation technologies with the Department of Energy (DOE) and the National Oceanic and Atmospheric Administration (NOAA)
• MOD annual infrastructure budget • Private fund: Aviation Investment Fund Company Limited (AIFCL)	Budget	• Department of Defense (DoD) annual budget • DoD Research, Development, Test, and Evaluation (RDT&E) budget

4. Conclusion

As energy security and renewable energy expansion rise as global priorities, it has become increasingly important to view military operations and renewable energy deployment through an integrated perspective. The cases of the United Kingdom and the United States show that the potential conflicts between offshore wind expansion and military operations are not just permitting disputes, but national challenges that require strategic coordination. Both countries have established dedicated mechanisms within their defense ministries, either specialized frameworks for offshore wind power or dedicated committees, that oversee the full scope from technological development to policy alignment. They have also built stable policy foundations, including financing, to institutionalize civil-military coordination in a systematic manner.

The UK's Safeguarding mechanism establishes a proactive consultation system led by functional units, linking technological solutions with stable finance to prevent conflicts in advance. The US Clearinghouse operates as a single negotiation channel, enhancing consistency and accountability in civil-military discussions, while serving as a strategic platform to coordinate among federal and state governments as well as private stakeholders. These examples highlight the need for defense ministries to move beyond the role of a deliberative body, and act as technological coordinators and leading facilitators of civil-military cooperation.

South Korea has also introduced the OSW Promotion Act, setting up governance for offshore wind and aiming to deploy nearly 14 GW of capacity over the next five years. At this juncture, the most urgent priority is to build the institutional foundation and capacity that will allow energy security and military security policies to coexist. This requires establishing a permanent offshore wind dedicated unit within the MND, institutionalizing an effective consultation framework with the private sector, and equipping the Ministry with the capability to proactively propose technical alternatives that are compatible with military operational needs.

When the MND acts as a cooperative and strategic policy coordinating body, conflicts between offshore wind development and military operations can be systematically managed, accelerating the achievement of national renewable energy expansion objectives. However, such a transition demands close coordination across ministries, including the Ministry of Trade, Industry and Energy[vi], and the Ministry of Oceans and Fisheries, as well as adequate national budget allocations and

vi The Ministry of Climate, Energy and Environment — responsible for the overall management of offshore wind power policy enactment and implementation — was newly established in October 2025 combining climate and energy responsibilities from the Ministry of Environment and Ministry of Trade, Industry and Energy.

strategic leadership. Military security and energy transition are not competing objectives but key pillars of national strategy. Building a coherent framework that aligns security strategies and energy transition policies will lay the foundation for a safer, more sustainable future for South Korea.

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