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MOD's Transition to Net Zero
Improving outcomes and agility with
Programme Aerodynamics®



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Executive Summary

As the Ministry of Defence (MOD) enters epoch one of its climate change strategy, the broader defence industry is embarking on a journey driven by complexity. Deloitte's Programme Aerodynamics® approach is uniquely positioned to bring flexibility to the demanding environment surrounding the MOD's Net Zero transition.

As climate change becomes more prevalent and impactful on businesses, society and the environment, military operations will be put at higher risk due to more volatile and unpredictable shocks. The ability of organisations such as the Ministry of Defence (MOD) to operate efficiently and safely in this context will be tested. The MOD is also facing internal climate-related challenges, accounting for 50% of the central government carbon emissions profile. With climate change set to transform 'the way we protect, operate and fight'¹, the Armed Forces must step up to this previously overlooked challenge and adapt to the rapidly changing context.

Climate change as a threat multiplier in the national security domain is well understood – it exacerbates instabilities and threatens peace by evoking resource competition, governance breakdown, civil unrest and energy-related geopolitical tensions.

There is little consensus, however, on how to align defence forces to address these threats while maintaining the primacy of mission-critical capability. The MOD's challenge is not only decarbonising their own operations but also understanding how climate change will further destabilise the world, and mitigating the associated risks. For the MOD to be recognised as a global leader in responding to the emerging geopolitical threats exacerbated by climate change, sustainability must become a strategic objective.

*"This is not doing it for moral reasons. This is not doing it because it's about emissions. It's about our own capability, it's about our ability to be the most successful and the most credible force that we can."*¹ – Lt Gen Richard Nugee, lead author of the UK Ministry of Defence's [Climate Change and Sustainability Strategic Approach](#) report

¹ Ministry of Defence Climate Change and Sustainability Strategic Approach (publishing.service.gov.uk)



MOD Emissions: From where Defence is now, to what it must achieve

The Cabinet Office's [Integrated Review](#) sets out the government's overarching national security and international policy goals to 2025 and illustrates how defence must shift its thinking to modernise forces and capabilities. The MOD's response, [Climate Change and Sustainability Strategic Approach](#), embraces essential elements of this modernisation, allowing decarbonisation to be a significant driver of technological change while keeping the future needs of defence forces as a key consideration.

The MOD tends to classify its emission activities into two broad areas:

- Estates
- Capability and equipment

MOD figures indicate that the emissions of capability are over 60% of the total. However, a total emissions figure is not provided. Given that any decarbonisation strategy relies on reliable and consistent data, the Climate Change and Sustainability Strategic Approach report recommends establishment of a single data dashboard for the Forces, able to feed into investment decisions and scenario modelling.

Resource constraints dictate that the MOD will not be able to develop all required technologies itself.

Instead, by adopting technological opportunity from wider industry, the MOD will take a stance of constant adaptation, ensuring new equipment is modifiable as soon as new sustainable options become viable and cost effective. Substantial engagement beyond the scope of traditional defence and security sectors will also put the industry in a strong position to rapidly adopt emerging technology. By continually assessing the potential consequences of emerging capabilities on programme design and schedules, the MOD will be better equipped to embrace maturing technologies as soon as is practical. Retaining military capabilities throughout the net zero journey is imperative. Wargaming and operational analysis across a number of scenarios will be key to understanding operating environment tolerance, logistical burden and security of supply.

Further challenge lies in creating a collective understanding that sustainability is an operational benefit rather than a performance threat. A forward operating base that can sustain itself, reduce the cost of supplying food, fuel, water and power, will most certainly create better operational effect.



What would meaningful transformation look like?

The Ministry of Defence's substantial share of the overall government emissions profile means that a siloed, special military approach is not the answer. Defence represents a cross section of the UK public sector and its supplier landscape and therefore all stakeholders need to be fully involved in shaping wider society's net zero future. The MOD has diverse options for reducing emissions, based both on their source and their relation to mission-critical capabilities. Achieving net zero will involve both actions taken to directly reduce environmental impact and the momentum of early initiatives to inform ongoing strategic planning. Below we suggest steps to consider when balancing sustainability with defence capabilities, drawn from across the spectrum of environmental, social and governance (ESG):

- **Create a constructive sustainability culture**
MOD's climate transition requires a constructive sustainability culture and deeply embedded human system. This must last the test of time as the skills of the defence workforce will always be changing. It must also be embedded at all levels of command and control, as the levels of defence at which change is enacted will vary. Procurement, acquisitions and commercial processes will need to change at a defence level, whilst freedom should exist for individual collaboration and command at domain and local levels. Realising this bold ambition to shift culture whilst balancing short-term investment against long-term capability requirements will require operational and cultural agility. Leaders coming through the ranks will need to be challenged with sustainability targets, creating an environment where energy is increasingly

treated as a battlefield commodity, just like food and ammunition.

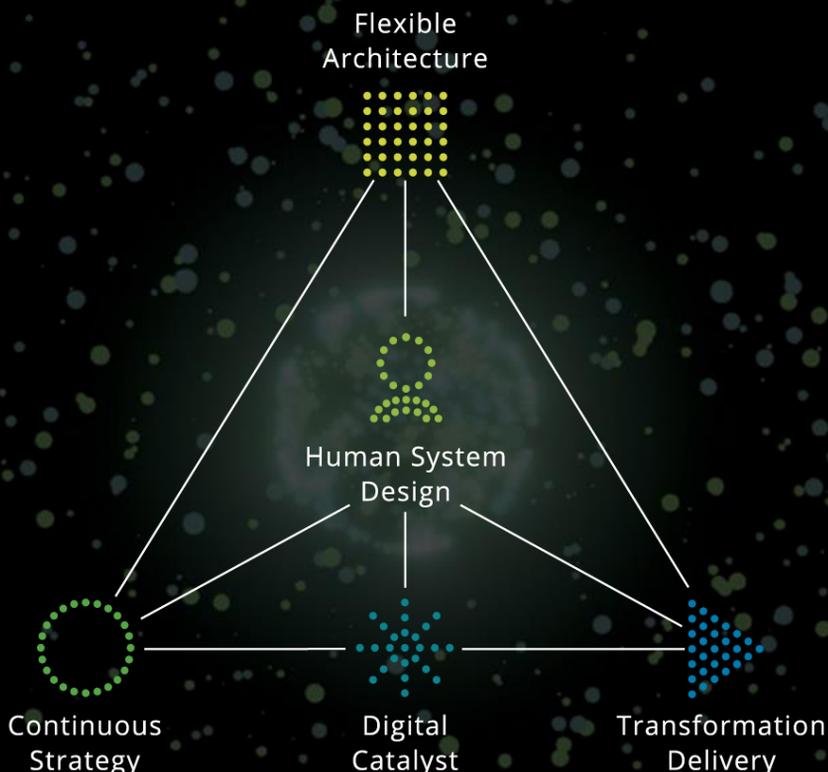
- **Address wider government social priorities**
Operationalising cross-sector collaboration will open significant opportunities for defence supply chains to address wider government priorities, such as 'Levelling Up', a flagship endeavour for the long-term UK economic outlook. Given defence is already heavily concentrated in regional innovation clusters, continued regionalisation and localisation of net zero efforts could play a significant role in advancing the 'Levelling Up' agenda. MOD's climate research and development should be a UK-wide endeavour, and this can be realised via existing commitments to expanding the regional footprint of the Defence Science and Technology Laboratory and the MOD Chief Scientific Advisor's extramural research contracts outside of the greater south east region. Defence can therefore aim for a strategic climate approach that aligns with society, the environment, and the economy.

- **Embed frameworks and processes for green governance**
The more effectively defence ecosystems embed social value in commercial activity, the more the SME value chain will adapt and respond. Application of the [Social Value Model](#), which requires ESG themes to be evaluated in all UK central government procurement, should prioritise climate and sustainability where appropriate. This will establish a clear thread from government net zero priorities to MOD contract awards. Standardisation is crucial as it would be easy to confuse 'science based targets' with 'net zero' with 'carbon neutral' in the investment decision making process.

How to approach and structure the transition

Defence programmes set up to address the challenge of climate change will inevitably operate at different speeds/agilities and within multi-cycle timeframes. They will therefore require novel approaches in delivery. Deloitte's [Programme Aerodynamics®](#) approach enables the successful delivery of complex, multi-year, multi-actor transformations that have high levels of VUCA (volatility, uncertainty, complexity and ambiguity). It brings enterprise flexibility to the delivery of high impact programmes that can be deployed in environments as varied and demanding as the landscape within which MOD's net zero transition sits.

Conventional approaches to programme management, with their misguided programme controls mindset, lack the flexibility needed to navigate the change and complexity core to defence's operational and technological environments as climate change progresses. Instead, our unique approach builds in the characteristics needed for net zero transformation such as evolutionary planning, strategic horizon scanning and digital-first insight. By continuously reviewing programme architecture, which should all fit on one page, a 'big picture' view of the ESG agenda can be maintained.



Net zero transformations face the typical challenges of large programmes, such as maintaining an ad-hoc strategic focus where insufficient resources exist for anticipating future needs. The continuous strategy of Programme Aerodynamics® enables non-linear development of solutions and faster responses to new challenges. As defence programmes average 18 years in length, they will need to retain agility by designing energy elements last, as it is impossible to know what the energy solutions and operating environments will look like so far in advance. One of the main benefits of Programme Aerodynamics is the ability to adapt to uncertainty. The MOD will need to engage proactively with industry, continually scanning the horizon to look forward, assess technological choices, and anticipate risks and opportunities in the climate R&D space.

As the MOD enters epoch one of its climate change strategy, the broader defence industry is embarking on a journey driven by complexity. Service personnel are trained to overcome significant challenges with the tools at hand and now they are in the position of being able to plan strategically. Only by recognising MOD's net zero transition as a major programme, will leaders be equipped to navigate the continually evolving requirements while remaining fit for purpose.



Get in touch

We would be delighted to discuss how our Programme Aerodynamics® approach could support your programme.

Our key contacts are below, to whom you can reach out via email or LinkedIn. We can also offer an you immersive 'Deloitte Greenhouse lab' to discuss your key organisational challenges in more detail and provide you with a tangible action plan.

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