

Where next for UK Defence in an era of climate crisis?

Climate change will affect the military in many ways, including the need to decarbonise the Forces themselves. The Ministry of Defence's first steps have been impressive. To build on them, it must consider its next moves with care.

“Climate change is a systemic risk,” says Leslie-Anne Duvic-Paoli, senior lecturer at the Dickson Poon School of Law at King's College London. “And the military needs to adapt to an increasingly unstable world.”

As the UK aspires to continue to be a full-spectrum power, the MOD and the Forces have to ensure that they can navigate climate-related uncertainty. To operate anywhere, in any environment, Defence will have to prepare to deploy in a wider variety of weather conditions. It will need equipment that holds up and remains effective in more extreme temperatures.

Looking further ahead, defence may have to respond in unfamiliar theatres of operation. It will probably have to respond to security threats caused by climate change, such as conflicts over water or new forms of piracy.

The MOD will need to develop a long-term strategy that enables the Forces to adapt and mitigate risks – the ones we know about and the ones that are not yet apparent. But there is one particularly crucial and immediate priority. Defence accounts for 50 per cent of central government's emissions, so decarbonisation must be top of the agenda.

The move from mission to mandate

The UK is committed by law to reach net-zero carbon emissions by 2050, with a new legally binding reduction target of 78 per cent by 2035. This means that any greenhouse gases emitted have to be offset by commensurate reductions by 2050. Scotland has set out an earlier target: net zero by 2045.

This is important domestically, because it is a legal obligation. And it is important internationally to uphold the UK's reputation as a decarbonisation leader. The UK was the first country to pass a climate law, and the first country to adopt a net zero target. The country may only generate two per cent of global emissions, but those are significant milestones in terms of influence.

“Two per cent is one in 50,” says Howard Lungley, Principal Consultant and Sustainability Lead at Frazer-Nash. “In a room of 50 people, one person can successfully influence the other 49. We need to clearly articulate our ability to lead and influence the agenda.”

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The right approach

In its [2020 progress report](#), the Climate Change Committee (CCC) suggested that the MOD decarbonise buildings and fleets, and assess the potential for alternative fuels for land vehicles, ships and aircraft.



The MOD itself has already taken steps. Lord Deben, chair of the CCC, says that the MOD is, to date, the one government department that has approached the committee of its own volition to confirm it is moving in “the right direction”.

“They [the MOD] recognised right from the beginning that it is not just a simple matter of reducing the amount of energy they use,” he says. “But also looking at ways in which their land could itself become a carbon sink to sequester carbon.”

Lieutenant General Richard Nugee’s wide-ranging [report](#) also outlines how Defence should respond to climate change internally, with suggestions for decarbonisation leading up to 2050, such as purifying water on bases to produce food and switching to electric vehicles.

“There is a growing recognition that the MOD can’t afford to stay still,” says Frazer-Nash’s Howard Lungley. “Low carbon solutions are increasingly seen as better from an operational perspective. The MOD needs to embrace decarbonisation because over the next few decades it is going to be the biggest driver of technology that we’ve ever seen.”

How to get to net zero

Over the long term, decarbonisation to net zero is a complex organisational challenge. To achieve it, the MOD must consider five key strategies:

1. Data and analytics

Decarbonising involves measuring current emissions, reductions over time and how much can be mitigated by sequestration and other methods. Given that, any decarbonisation strategy relies on data, because you can only manage what you can measure.

As Lt Gen Nugee recommends in his report, establishing a single data dashboard for the Forces will make managing decarbonisation much easier. It would, for example, make it easy to compare progress between departments and find areas for improvement.

But the more any organisation decarbonises, the more reliant on data it becomes, because once the low-hanging fruit has gone, it is harder to find more opportunities and decide where to focus efforts to maximise reductions.

The quality of the data matters too. It is vital to have reliable and consistent data on emissions from different parts of the Forces. Improving the quality of data on emissions will also make it easier to make investment decisions. Scenario modelling can be used to explore and evidence the best timing of investment decisions by comparing costs, capability, risks, benefits and uncertainty for a range of possible future events.

2. Technological solutions

Collecting that data will rely on technological solutions such as sensors. These allow organisations to gather and analyse the emissions of everything from brake pads to buildings. Predictive analytics can help decarbonisation by offering updates on key metrics in real time.

Some technology offers carbon reductions and military advantages at the same time. Electric vehicles, for example, are quieter and so harder to detect. Self-sustaining bases powered by renewables will be more resilient and less dependent on risky, expensive supply chains.

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3. Culture change

The MOD will have to find new and innovative ways to decarbonise. The Forces should empower and encourage their personnel — all ranks, in every location — to support and accelerate reduction efforts, and to suggest improvements. This may require a culture change that establishes a headline mission of ‘defence net zero’, and encourages ongoing proactive suggestions for how to achieve it.

4. Decarbonisation through procurement

Lt Gen Nugee’s recommendation that Defence “demand clear sustainability requirements from contractors to drive change in behaviours and outcomes” is the right one. “The Forces have a huge supply chain,” says Lungley. “If you’re able to say to suppliers, ‘we won’t work with you as a supplier unless you have a credible decarbonisation plan of your own,’ it will stimulate innovation down the supply chain.”

But the MOD can do more than that to drive change — it can lay out a long-term plan for future changes to its sustainability requirements. This would do two things: it would signal a long-term intent to decarbonise and give suppliers time to adapt accordingly.

5. Prepare in advance

Lungley highlights the importance of preparing to decarbonise years in advance, citing the rollout of electric vehicles as a parallel example from a commercial fleet operator. “We knew it would take two or three years before electric vehicles would be commercially attractive,” he says. “But it took two years’ worth of work inside the organisation before we were ready to adopt them.”

His advice? Waiting until the technology is ready is a bad strategy; getting ready so you’re able to adopt it without delay as soon as it becomes attractive is better.

6. Ongoing learning

Decarbonising a military is an operation that does not have a long-established body of knowhow. The MOD would benefit both itself and global military decarbonisation efforts by setting up platforms to enable ongoing research and development and increase the knowledge base. This could be done in partnership with other militaries, for example from NATO countries.

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Time to set a powerful example

Responding in a timely manner to the uncertainty and risk of climate change is a challenge, and so is forming a credible decarbonisation strategy. But the MOD has two advantages over other departments: a culture of setting a strategy then executing it and, in most cases, a clear chain of command. Compared with departments where power and control are more dispersed, Defence is well positioned to execute on a strategy.

Decarbonising defence is not just important as an end in itself; it is also a powerful example for the rest of government. “If they can do it, then what about local government?,” says Lord Deben. “All the rest of it becomes much easier.”

The same goes for the rest of the economy. “You cannot ask citizens to reduce emissions but not have militaries do it,” says Duvic-Paoli. “It is important for public acceptance.”

This is a mission that the Forces can lead.

