

**Climate Change and Sustainability
Report**

*'If you don't deal with it today, you will not
be able to deal with it tomorrow'*

Lt Gen Richard Nugee CB CVO CBE

*'Nobody predicted it, ... but afterwards everybody saw it was
inevitable' 1834 Thomas Carlyle on the French revolution*

*'Let us use that unprecedented luxury of seeing this next
crisis coming.' Gen Tom Middendorp*

National Climate Change Conference

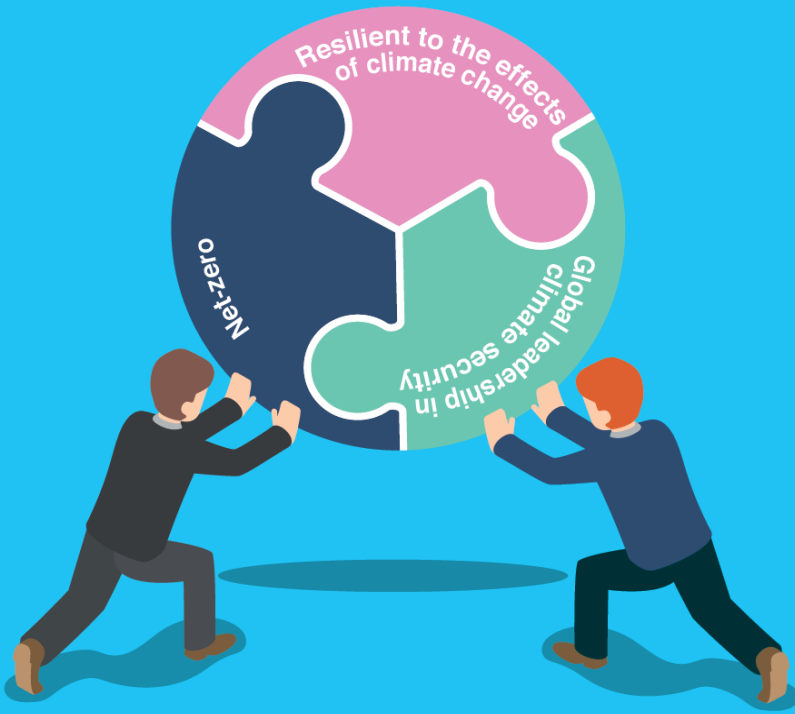
Lt Gen Richard Nugee CB CVO CBE

27 Jan 2021

PRIMARY DEFENCE AMBITION 2050

“We should be a global leader in climate security; we can reach net zero by 2050 and we must adapt to the climate changed world that will exist in 2050.”

Ambition 2050



To act and be recognised as a **global leader** in response to the emerging geopolitical and conflict-related threats being exacerbated by climate change

To **adapt to be able to fight and win** in ever more hostile and unforgiving physical environments

To **reduce emissions** and increase its sustainability activity and, as a Department contribute to, the UK legal commitment to reach net zero emissions by 2050.

TAKE THE OPERATIONAL ADVANTAGE OPPORTUNITY

capitalising on concepts and technologies which offer better endurance, resilience and are fitted for a climate changed world.

- AI-enabled planning;
- Self-sufficient deployments;
- Semi-autonomous and uncrewed platforms;
- Electric, quieter, stealthier propulsion (engines);
- Use of in-field additive manufacturing (3d printing).



INCREASE BIODIVERSITY AND CARBON CAPTURE

By improving the Defence Estate

Reduce the emissions from the estate

- Reducing demand
- Increasing efficiency
- Moving away from fossil fuels,

Use the rural estate optimally to combine both its primary purpose – defence training – and to be as sustainable as possible.

- Improve the climate change resilience of the military training estate
- Maintain rural estate in good condition (maintain stored carbon levels, reduce wildfire risk, improve climate resilience).

Look for optimal sites for renewable emission-free energy generation, to build resilience of supply and reduce cost.

- Diversify energy streams, renewable energy production and energy efficiency measures
- Scrutinise carefully any future disposal of any of the estate
- Take into account embodied carbon for all new developments and refurbishments.



HOW WE INTEND TO BUILD MORE SUSTAINABLE EQUIPMENT

Ambition 2050: By 2050 defence has proven itself as a fast follower of green technologies wherever possible with sustainability at the heart of all procurement processes and decisions. Working collaboratively with industry defence has driven the right behaviours and outcomes into procurement and supplier and contract management to achieve our net zero ambition.

Front end requirements

- **Innovate** in technology and capability planning to deliver low carbon opportunities
- **Incorporate** CC&S considerations into all procurement processes
- **Configure** to be able to adopt emerging technologies (agile and innovative approach)
- **Whole Life Approach** – circular economy

Fast follower strategy

- Benefits in terms of cost, time, performance **and sustainability**
- Take into account **adaptation** to the changing environment when placing contracts now for equipment which may be in service well beyond 2050
- Embrace new technologies as early as possible but only when they are **mature and stable** enough to be viable

Relationships with industry

Year 1 recommendations

- Undertake an initial deep-dive analysis to take stock, mapping the whole life carbon footprint of the equipment and support plan against cost of carbon considerations identifying where interventions to reduce equipment footprint can be most effectively directed
- Implement appropriate weighting to low carbon options in the acquisition assessment. This should incentivise industry to offer whole life low carbon solutions for new equipment while also exploring lower emission modifications to old ones
- Develop fast follower strategies to exploit low carbon technological opportunities
- Build a route to net zero compliance system



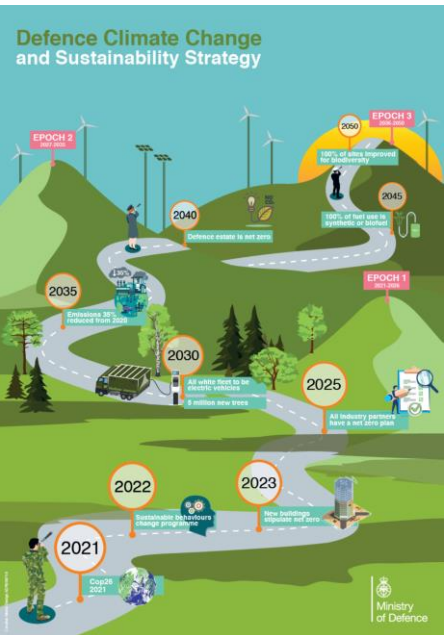
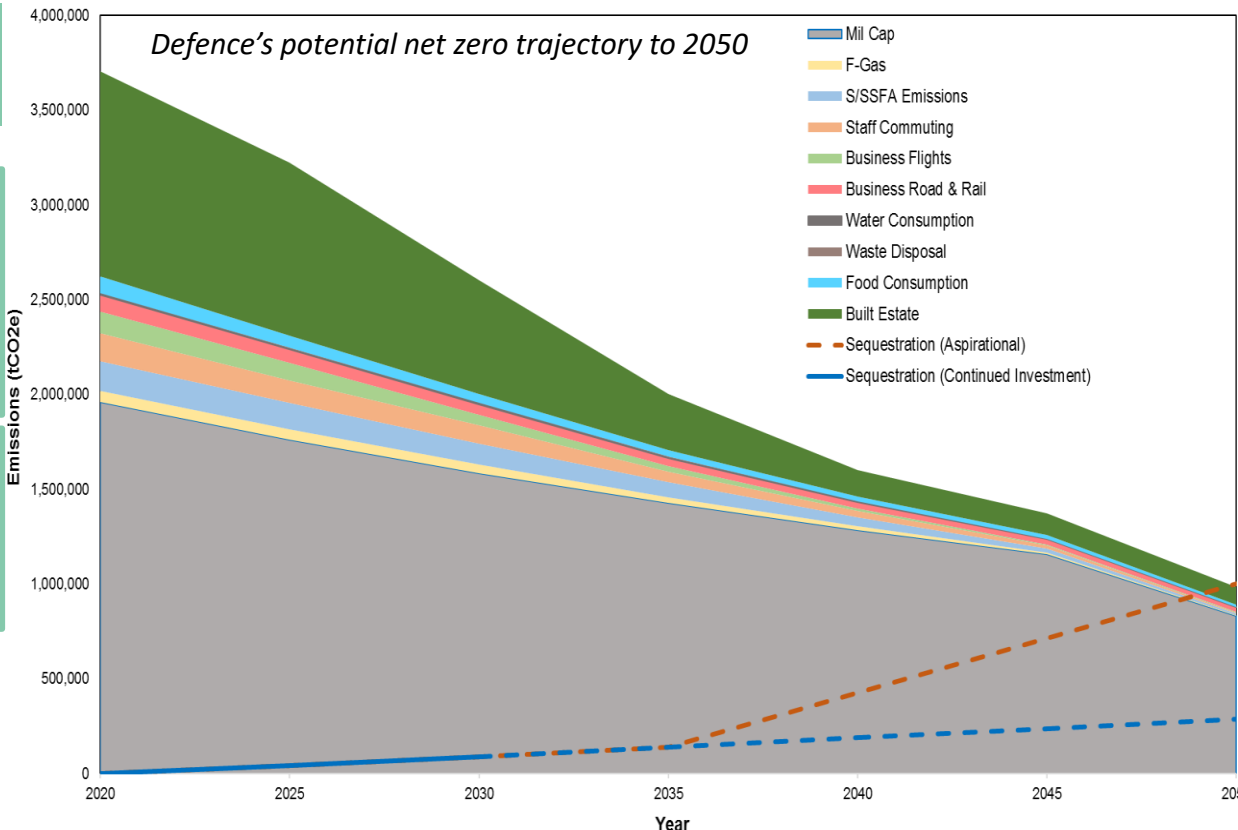
HOW WE INTEND TO GET TO NET ZERO BY 2050

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Minimise emissions as much as possible

- moving to renewable energy sources
- improving the efficiency of the estate
- designing greatly reduced emissions into the operational capability of equipment

- **Balance the residual emission profile** due to legacy equipment in 2050
- a rural estate that sequesters (biodiversity and pollination potential)

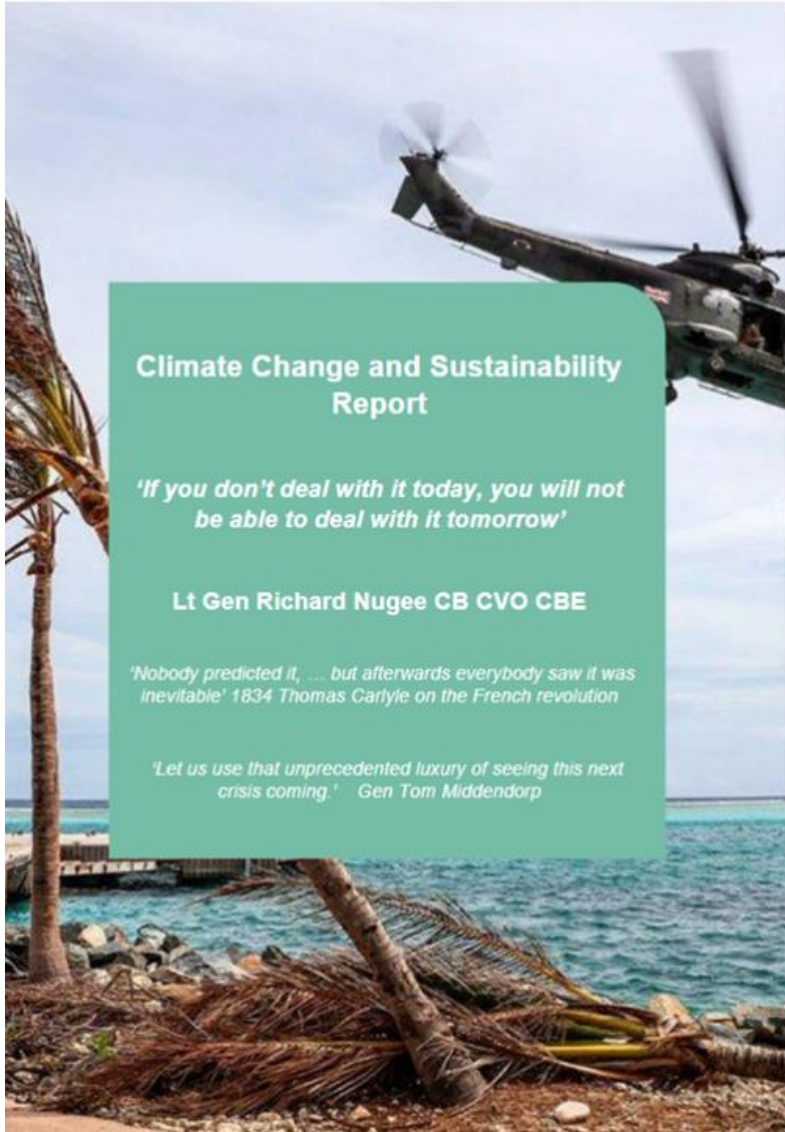


- **Concept of carbon accounting** (a carbon budget) for all parts of defence

- **Embrace the circular economy**
- defence's supply chain
- building on partnerships with local communities
- building maximum self-sufficiency at home, in overseas bases and on deployment

- Better understand the **whole life costs of projects**

- Putative **campaign plan**, based on success criteria over the next 30 years (split into 3 epochs of 2021-25, 2026-35, 2036-50) is illustrated to show what should be achieved



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QUESTIONS?