

‘Letter from the Future’ – A fictional view of how sustainable technology can deliver advantage.

This is a piece of fiction and does not represent any current or future UK MOD policy position.

Dear General

As I reach the end of our 12-month deployment I thought I should share with you how UK Defence has played such a significant part in supporting the wider NATO mission to secure the peace between Russia and Ukraine.

Over 8 years of war has led to the almost complete destruction of critical national infrastructure – so our achievements here I think must be viewed in that context.

I’d also offer up front that our success has much to do with the almost prophetic foresight shown by our predecessors in shaping the roles, capabilities, and training of our forces today.

Despite the distractions of fighting by proxy a major war in Ukraine and the challenges with what turned out to be the longest post War recession, it was their direction in the early 2020s to ruthlessly embrace the opportunities for sustainability in responding to the existential crisis posed by Climate Change which has ultimately delivered the profound operational advantages we enjoy today.

For example, the deployment of our first micro-nuclear generator has not only allowed us to service the needs of the 5,000 troops stationed here and our electric/hybrid vehicle fleet but has released the force from protecting the logistic tail to service the diesel generator farms of old – by my rough calcs that's over 6 million litres of diesel which we have not had to move this year alone. And I am old enough to remember that in Afghanistan and Iraq over 60% of our casualties were taken enabling and protecting such convoys!

Combining these reactors with the new portable Air Capture units has allowed us to produce in situ our own synthetic fuel for all deployed heavy vehicles and supporting aviation – without any net contribution to CO2 emissions. Needless to say, the most recent European wide drought and here in Crimea 3-month spell of constant daytime temperatures above 40 degrees has reminded us all of the cost of missing the 1.5 degree limit. Bring back the UK summer of 2022 – it was a breeze!

We've also played a key role in establishing the UK's first operational Vertical Farm. We now get a chunk of our carbohydrate and all our greens and fruits from these units – and the Farm occupies a space less than half a football pitch! The water they use is constantly recycled and the energy demands are trickle fed by the integrated solar panels during the day and by night switch through our Smart Grid technology to nuclear. We've reduced fresh food movements by nearly 70% - the Royal Air Force tell me it's great to be moving more people than carrots! I'm not sure all the soldiers are quite as keen as the General on the plant-based diet we've largely adopted, but the in-situ processing unit we built means we've released the Royal Navy to focus more on enforcing

the maritime exclusion zone than protecting the movement of our frozen meat!

The development of 'Factory in a Box' deployed ISO units has finally come of age – the direction taken back in 2024 to design into our kit the need for parts to be 3D printable has made a huge difference to the deployed inventory. The Logistic Brigade Commander was telling me the other day that movement of inventory is reduced by nearly 40%. Coming on the back of the wholesale digitisation of the engineering and logistic enterprise that concluded a couple of years ago and what's now referred to fondly around here as 'Support Prime', our Equipment Maintainers and Logisticians no longer have to wait out on Priority Demands that never arrive – so equipment availability has shot up.

I've saved the best for last – the introduction of the new Directed Energy Weapon systems into the Brigade Combat Teams and into the Navy's ships allied to ready access to energy means we can, in effect, produce our own ammunition in situ – crazy, I know, but reducing the volume of ammo we have to store and then move has liberated the Joint Force Commander in terms of planning force movements.

Of course, all of this is in stark contrast to the Russians over the border. I suspect they are rueing the decision they made back in 2023 to cancel all the investments they were making in electrification and green technology to prioritise the fight in Ukraine. They are still catching up. But to illustrate my point, our US intelligence colleagues who are tracking this stuff, reckon every litre of fuel by the time it reaches their forward locations costs well over \$100/litre – and that's when they can

get it! They continue to be fixed by logistic considerations when it comes to operational manoeuvre. Very 20th Century.

Who would have thought that sustainability would be the solution to the future force not an imposition? Well, thank goodness our predecessors did! Enabling a deployed force that can Live, Move and Fight like never before. On that note I'll sign off!