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Resilient SAF Supply Chains for Fuel Security

Parliamentary Expert Testimony Position Paper

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On Wednesday, November 4, 2026, the Standing Committee on Infrastructure and Water Management of the House of Representatives of the Netherlands held a roundtable discussion on Sustainable Aviation Fuel (SAF) with several experts, including HCSS strategic analyst Irina Patrahau. In preparation for the roundtable discussion with members of parliament, Patrahau has drafted this position paper in which she outlines three priorities for the Netherlands and the EU: coordinate fuel security, strengthen supply chains, and recognise alternative fuel plants as strategic dual-use assets.

The Netherlands and the European Union (EU) face three interconnected challenges that necessitate urgent and coordinated action:

1. Strengthening military readiness
2. Restoring industrial competitiveness
3. Accelerating the energy transition.

Fuel security lies at the intersection of these priorities. Sustainable aviation fuels (SAF) can contribute not only to aviation decarbonisation, but also to industrial development and greater resilience against disruptions to fuel supplies. Reducing dependence on imported fossil fuels requires scaling up domestic production of SAF while ensuring that the supply chains underpinning these fuels remain resilient to geopolitical and other disruptions. There are two main types of SAF considered throughout this position paper: advanced SAF derived mainly from biomass, and e-SAF, produced from green hydrogen and CO_2.

The development of (e-)SAF has strategic implications for defence. Military fuel readiness depends heavily on civilian fuel supply chains, and disruptions could undermine operational readiness. Like in civilian aviation, militaries are looking at a gradual phase out of fossil fuels in favour of sustainable fuels. Given the military's imperatives for operational readiness, its energy transition timeline may extend beyond that of the civilian sector. SAF and e-SAF are drop-in fuels that can be used directly in existing engines and infrastructure, so they offer an attractive gradual pathway to decarbonisation.

Supply chain resilience must be an integral part of SAF and e-SAF development, for civilian and military users. Decreasing import dependencies lowers vulnerability to geopolitically motivated supply disruptions but also to other types of issues that can affect the supply routes of these fuels and their feedstocks, including armed conflict, piracy, or climate disasters. In turn, autonomy over fuel production significantly increases.

The two fuel pathways face distinct resilience challenges:

- **SAF**: Domestic supplies of used cooking oil and animal fats are already heavily utilised in producing biofuels, while their use is subject to limits under the Third Renewable Energy Directive (REDIII). A majority of imports come from Asia, causing dependency issues for this emerging supply chain. Fraudulent supplier disclosures also raise certification and traceability concerns.
- **e-SAF**: Synthetic fuels mitigate issues related to the origin of feedstock, as they can be produced in Europe from domestic green hydrogen and carbon. However, scaling up production remains challenging, and domestic production will still depend on the availability of affordable renewable electricity, green hydrogen and suitable carbon sources.

Developing resilient supply chains requires more than increasing production capacity. It also requires coordinated civilian and military planning, investment in strategically valuable production infrastructure, and policies that account for security of supply alongside emissions reduction. The following recommendations are based on HCSS research on the topic, including *No Fuel, No Fight: The Dutch Fuel Industry and European Military Readiness (2026)* and *Building Europe's alternative fuels industry for military resilience (2026).*

1. Appoint a national fuel security representative to build a civil-military fuel strategy and coordinate this at European level.

Fuel infrastructure is largely civilian-owned and regulated, while military demand remains small and episodic. The likelihood of a fuel demand shock due to military escalation in Europe may be relatively low, but its potential impact would be disastrous. Without structured civil-military coordination, fuel production plans may become incoherent and undermine fuel readiness for defence. A consolidated strategy should bring together Ministries of Defence, Economic Affairs and Climate, Infrastructure and Water Management, and industry stakeholders around a shared assessment of risks, demand scenarios, and crisis roles. The Netherlands should also actively advocate within the EU and NATO for deeper coordination on fuel demand planning, emergency prioritisation, infrastructure protection, and burden-sharing.

2. Build resilience into alternative fuel supply chains.

Support for alternative fuels should address security of supply alongside emissions reduction and industrial competitiveness. This means prioritising production pathways, infrastructure investments, demand creation and feedstock choices that reduce dependence on imports and are compatible with military requirements where possible. This requires evaluating the vulnerabilities of each fuel pathway across the entire supply chain. For advanced SAF, priorities include feedstock availability, import exposure and reliable certification. For e-SAF, they include access to renewable electricity, green hydrogen and carbon inputs. Policymakers should also assess how alternative fuel supply chains would perform under crisis conditions, including disruptions to electricity, green hydrogen, or imported intermediates.

3. Recognize alternative fuel plants as dual-use assets and commit funding accordingly.

The progressive adoption of fuel blends can support military readiness only if governments, both in the Netherlands and at the EU and NATO level, take a proactive approach to supporting this industry by generating demand signals and reducing investment risk. Specifically, national Ministries of Defence can choose among financing options: (a) paying a reservation fee to alternative fuel producers, helping them maintain minimum production levels over time and prioritising access in times of need; (b) securing long-term offtake agreements, creating a strong demand signal for industry to produce adequate amounts of alternative fuels; and (c) acquiring a stake in or full ownership of an alternative fuel plant, firmly placing fuel security within the control of the military. The 1.5% infrastructure-related defence spending pledges by NATO Allies offers a potential instrument for this purpose. Alternatively, the upcoming EU Multiannual Financial Framework (MFF) could be leveraged for scaling up alternative fuel production.