



NATO Allied Command Transformation

Joint Force Development Experimentation & Wargaming

Branch 2023 Fact Sheet – NATO Operational Energy Concept

Background:

Recent military engagements have shown that excessive dependence on fossil fuels was a source of logistical challenges and significant costs, due to the specificities of operations (isolation of civilian energy networks, inflexibility, unpredictability, low level of resilience of energy stocks, etc.). Consequently, it is a strategic objective for the armed forces to develop an energy concept allowing them greater effectiveness on the battlefield. Furthermore, due to environmental concerns, NATO nations have been engaging the energy transition for a couple of years aiming to reach the CO2 neutrality in 2050 for most of them and NATO has recently developed an action plan on climate change and security. This evolving context will be weighting the way of supporting forces with alternative energy.

As a result, new sources of energy, new energy storage solutions, and new ways of energy delivery, new power generation systems and new powertrains are expected to come in the long term. The possible impact will likely be a shift from the traditional fuel supply chain to an innovative fuel supply chain under different aspects and new risks to be managed appropriately (like interoperability issues, cyberattack, lower resilience, etc.).

Therefore, in early 2021, HQ SACT has proposed to the NATO Energy Security Centre of Excellence to elaborate a NATO concept on operational energy delivered to the forces in operations and exercises.

Problem to be solved by the NATO OEC - how to enhance energy efficiency in light of NATO's operations, to reduce dependence of the NATO deployed forces on traditional fossil fuels and to improve interoperability of NATO deployed forces for new energy sources and technologies (material and non-material):

- *Inefficient use of energy by the NATO deployed forces. Improved energy efficiency means less amount of energy used, less personnel to protect resupply convoys, hence tactical, operational and strategic benefits and an improved energy security for the military;*
- *Excessive dependence of NATO deployed forces on traditional fossil fuels. It renders them vulnerable to energy shortages and risks the lives of soldiers in protecting fuel supplies;*
- *Interoperability of NATO deployed forces for new energy efficiency tools, whether material (equipment and technology) or non-material (energy management techniques). This tools need to be standardised with commonly understood and implemented processes in order to obtain and maintain operative interoperability.*

Climate changes concerns: NATO Allies have committed themselves to engaging in energy transition by significantly reducing greenhouse gas emissions from military activities and installations without impairing personnel safety, operational effectiveness and the deterrence and defence posture.

The NATO Operational Energy Concept will include the energy necessary for training, moving, and sustaining military forces and weapons platforms for military operations. It should obviously deal with Energy Management in its entirety (production, procurement, transportation, storage, distribution, quality control, accountability, data collection, security, protection, etc.) and provide guidance for the main principles in order to design

future NATO energy standards. The Concept should provide a foundation for further changes to regulate the subject of the energy needed to conduct any type of NATO operation. The NATO OEC should be an operational level concept that governs and conducts planning of NATO campaigns and joint operations in the range of energy used for operations and exercises.

- Aim:** This experiment aims to use Ex STJU23 to enhance energy efficiency in light of NATO's operations, to reduce dependence on traditional fossil fuels and to improve interoperability with new energy sources and technologies. The focus will be on the inefficient use of energy - Excessive dependence of NATO deployed forces on traditional fossil fuels - Interoperability of NATO deployed forces for new energy efficiency tools. It will assess & validate how energy efficient technologies (material and non-material) influence energy consumption of NATO deployed forces. It will also validate the improvements of interoperability of NATO deployed forces within the field of new energy technologies and discover the meaning of 'energy used in operations' or "operational energy" for NATO deployed force. Lay foundations for the future NATO doctrine about Energy Issues and Energy Security.
- WDI:** NATO Operational Energy Concept aligns under Allied Command Transformation Warfare Development Imperatives (WDI) – Influence and Power Projection and Integrated Multi-Domain Defence.
- Category:** Experimentation in Exercises
- Sponsor:** NATO Energy Security Centre of Excellence
- Headquarters:** NATO Allied Command Transformation; Joint Force Development Directorate; Experimentation & Wargaming Branch
- EWB:** JFD EWB delivers transformation to the Alliance through the conduct of experiments and wargames. Visit www.act.nato.int/ewb-pressroom for more information, or visit us online at the CDE365 Website located on [NATO's Transformation Network](#).
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