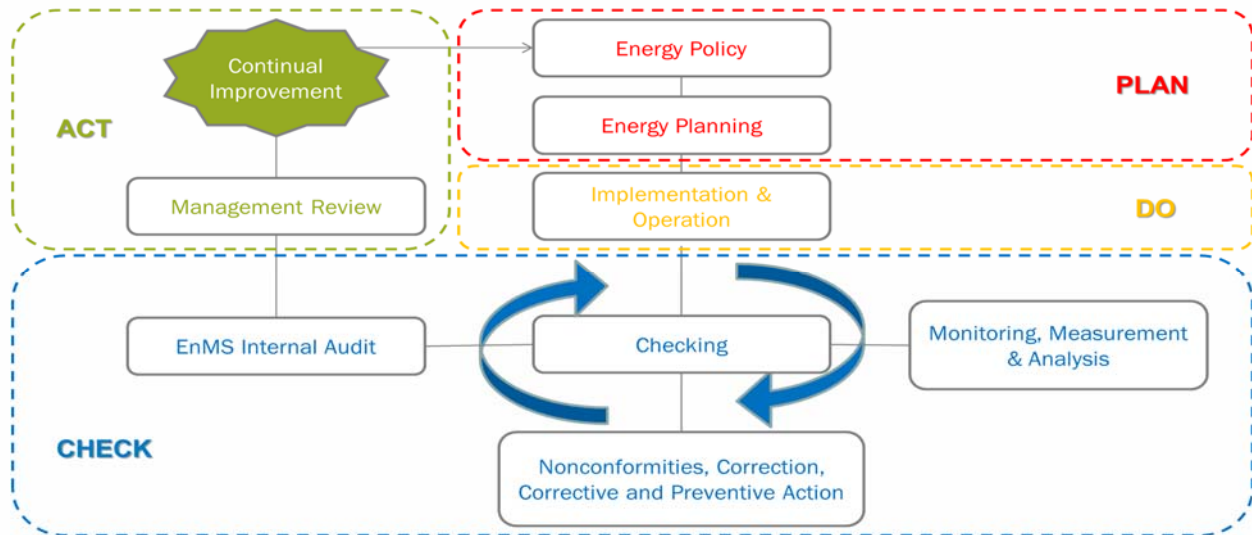


# Energy Management Systems



@ adopted by ISO 50001:2011

## Why?

Article 5 of the **Energy Efficiency Directive** (EED<sup>1</sup>) encourages public bodies, among others, to develop and implement Energy Management Systems.

Energy Management Systems (EnMSs) and Environmental Management Systems (EMSs) that include the energy aspect have been proven as strong tools to increase energy performance in various domains worldwide.

## How?

ISO 50001, ISO 14001 and Eco-Management & Audit Scheme (EMAS<sup>2</sup>) are management systems that avail the incorporation of the circle of continual improvement on energy performance into everyday activities.

In the context of energy management, the aforementioned systems follow the Plan - Do - Check - Act Circle as follows:

- **Plan:** issue an energy policy, allocate tasks, conduct an energy review, establish the baseline, set appropriate Energy Performance Indicators (EnPIs), establish objectives / targets and develop relevant action plans.
- **Do:** implement the energy management action plans (including interventions for more energy efficient operations / activities, adequate training / awareness schemes and incorporation of energy criteria in design and procurement).

- **Check:** monitor, measure, analyse and report all energy-consuming processes as well as the progress on the implementation of the action plans to determine the performance against energy objectives / targets.
- **Act:** take actions for the continual improvement of energy performance.

## Benefits to the Defence Sector

Through rationalisation of energy consumption and introduction of innovative energy-related solutions, a broad implementation of EnMSs will avail the defence sector to:

- **support more effectively the operational requirements** and **further sustain operational capabilities;**
- **reduce operational risks;**
- **reduce operational costs;**
- contribute to the EU and national targets on energy efficiency and greenhouse gas emissions.

## Challenges for Defence

- Funding the implementation of EnMSs is not considered a priority, even though in many cases the Return on Investment (ROI) is very attractive and has a long term positive impact on budgets;
- The existence of various internal energy-related stakeholders (logistics, infrastructure, human

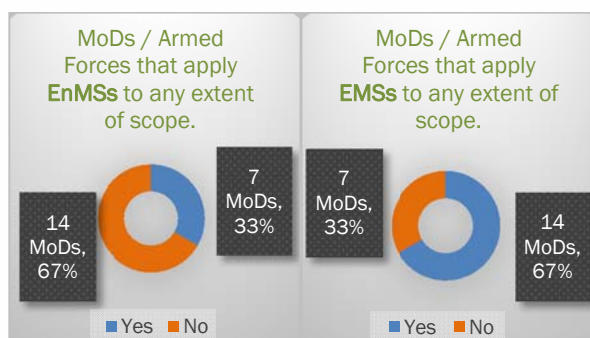
<sup>1</sup> Directive 2012/27/EU of the European Parliament & Council on Energy Efficiency.

<sup>2</sup> Regulation (EC) 1221/2009 of the European Parliament & Council on the voluntary participation by organisations in a Community eco-management and audit scheme.

- resources/ training, operations, maintenance, etc.) hinders internal coordination;
- o Frequent turnover of military personnel;
  - o The acquisition of sufficiently granular energy data that is necessary to ensure that action plans are effectively targeting Significant Energy Uses and that the commitment of personnel and all levels of command is maintained.

## Status in the Defence Sector

According to a relevant Questionnaire on EnMSs - EMSs (May 2017), answered by 21 MoDs, representing 93.2% of EU defence expenditure as well as 86% of EU defence personnel<sup>3</sup>, **the defence sector is evolving towards developing and implementing EnMSs and EMSs**. Currently, there are numerous MoDs that apply EnMSs and / or EMSs to various extents [i.e. full scope (support + operational activities), in pilot scale, excluding operational activities]:



## Examples in Defence Context

### Irish Defence Forces

The development of an EnMS in the Irish Defence Forces (IE DF) began in 2009, under the Irish Standard IS 393:2005 and, later on, under the EN 16001:2009. Since 2012, the IE DF have been implementing an ISO 50001 EnMS covering the whole range of operational and support activities (around 9.000 personnel, 17 installations, over a 1.200 buildings, various land vehicles and small numbers of aircrafts and vessels). In 2013 they were the first Armed Forces worldwide to receive ISO 50001 certification. So far, **average 9% reduction in total energy consumption has been achieved**, compared to baseline year 2009.

### Ministry of Defence of Cyprus (CY MoD)

In November 2009, the CY MoD launched the pilot development and implementation of EMAS at **Kalbourtzis Army camp**, covering all the non-operational activities (approx. 300 personnel, 40 buildings, 80 vehicles). The camp was EMAS-verified in June 2011 and it is considered the first

defence installation to be included into the EMAS registry worldwide. Energy was identified as one of the significant environmental aspects. A target to reduce energy consumption per soldier by 5% on an annual basis until 2020 has been set. So far **a 57% reduction in energy consumption per soldier has been accomplished**, compared to the baseline year 2010. Following the success of this pilot project, the CY MoD has already started the implementation of EMAS in 10 more camps with disperse operational activities.

### French MoD

In January 2015 the FR MoD started developing an EnMS for the **La Valbonne Army camp** (approx.. 2.700 personnel, 200 buildings, military vehicles and transportation in general was excluded from the scope) following the successful implementation of an Energy Performance Contract in the camp. The camp was ISO 50001 certified in 2015. So far, **a 48% reduction in energy consumption (HVAC) has been achieved**, compared to the baseline year 2013, and **51% of the global site consumption is produced by renewable energy**.

### Hellenic MoD

Partially funded by EU LIFE tool, during 2012 - 2016 the EL MoD launched the LIFE11/ENV/GR/938 Military Energy & Carbon Management - MECM project, aiming at the continuous improvement of 3 military camps (**Triantafyllidi Army camp**, **Larissa Air Force Base** and **Souda Naval Depot Station**) through the development and implementation of EnMSs for all non-operational activities (in total: around 3.500 personnel, 600 buildings and various support vehicles). The project lead to ISO 50001 certification of the 3 camps in 2015 and has resulted, so far, to **an average 25% reduction in energy consumption** (compared to baseline year 2011).

Latest update: 23.10.2017

<sup>3</sup> Data for the year 2015, retrieved through EDA Defence Data portal (<http://www.eda.europa.eu/info-hub/defence->

[data-portal](#)). The EU MS MoDs that provided replies are: AT, BE, BG, CY, CZ, DE, EE, EL, ES, FI, FR, HR, HU, IE, IT, LT, LV, NL, PT, RO, SE, UK. CH also contributed.