

Normalising factors for data related to defence energy efficiency



Background Description

Energy performance indicators (EnPIs) enable the measurement and effective management of energy performance in an organisation.

For defence, simple EnPIs based on “energy consumption / service personnel” or “energy consumption / building floor area” do not take account of operational tempo or changes to defence capability.

To be of strategic value to defence and to facilitate benchmarking, a standard methodology is required to aggregate energy performance across individual elements of the defence system (air, land, maritime, infrastructure) to create defence specific EnPIs.

Project Analysis

Defence infrastructure uses multiple forms of energy and has hundreds of buildings, individual systems, processes and pieces of equipment.

The project will review, in conjunction with participating Member States (pMS), the breadth of defence outputs to identify a small number of core energy efficiency measures that can be used in isolation or aggregated for the whole of defence infrastructure to meet the standard set by ISO 50001. The focus will be on command and defence level performance reporting.

Objectives

The key objective of this project idea is to create EnPIs for key defence infrastructure components and develop a methodology for aggregating the EnPIs to report performance for the whole infrastructure of Member States armed forces which meets the standards set by ISO 50001.

Impact – Expected Outcomes

Development of the EnPIs will allow the defence sector to better monitor and report on energy performance through normalising energy consumption to take account of changes in operational tempo and changes to defence capabilities.

This information can be taken into account in national energy plans and EU level defence sector performance reporting. It supports the European Defence Agency (EDA) Steering Board decision to task the Agency to continue the energy data collection and analysis (E-DCAS) exercise to gather and further analyse the Member States’ energy data sets in the years to come.

Opportunities

Improved ability to benchmark the energy performance of the defence sector across the EU and within Member States will facilitate measurement of improvements in energy efficiency of the defence sector.

The outputs of the project are defence specific, although there may be opportunities for other sectors to adopt a similar methodology. EDA own budget funding likely to be the delivery route.

Challenges

The main challenges are:

- Defence is complex and developing meaningful high-level EnPIs which incorporate a measure of defence outputs will be challenging;
- Defence activities/outputs across the EU Member States may be very divergent;
- National security considerations may restrict the amount of information available to develop meaningful EnPIs.

Methodology

The project will be carried out in two phases:

- Phase 1: Development of a list of EnPIs;
- Phase 2: Development of algorithms for weighted aggregation of EnPIs.

The methodology to be applied is the following:

- Questionnaire to all MS to understand the different factors that impact on energy consumption across the EU defence sector;
- Up to 10 MS to be invited to take part in detailed discussion and data analysis taking an iterative approach across 3 or 4 meetings;
- Once a suite of EPIs has been identified, algorithms will be developed to aggregate them from a base level to produce higher level EnPIs with the top level being an indicator of the overall energy performance of a MS defence infrastructure.

Way Ahead

Taking the project forward will require funding for external consultancy and academic support to conduct research and develop the EnPIs and algorithms.

This project idea was developed during the second phase of the Consultation Forum for Sustainable Energy in the Defence and Security Sector (CF SEDSS II) and does not entail any future commitment for the EU Ministries of Defence (MoDs) or the EU institutions or agencies. However, it provides the framework for enabling the formation of multi-national collaborations at the European level to help the MoDs to address common defence energy-related considerations and to move towards a defence decarbonised future. The potential of those ideas will be further explored in the context of the forthcoming CF SEDSS Phase III (2019-2023).