



Defence Energy Data 2016-2020

In 2016, supported by the European Defence Agency's (EDA) Energy & Environment Working Group (EnE WG), EDA began collecting national defence-related energy data, aiming to gain a better overview and understanding of the types and volumes of energy resources used by European armed forces on an annual basis. In 2021, EDA enhanced the process by structuring the energy information, collection, and analysis, establishing a framework for monitoring participating Member States' (pMS) defence energy data. A methodology was set for continuous monitoring, creating a dedicated web tool (webpage) for analysing and presenting the collected data, respectively. This factsheet presents the results obtained from the regional compilation and analysis of data from 2016 to 2020.

Methodology

The number of European countries participating in the EDA has grown steadily over the years, and an average of 26 pMS¹ have collaborated in this defence energy initiative during the period 2016-2020, contributing their data to the analysis.

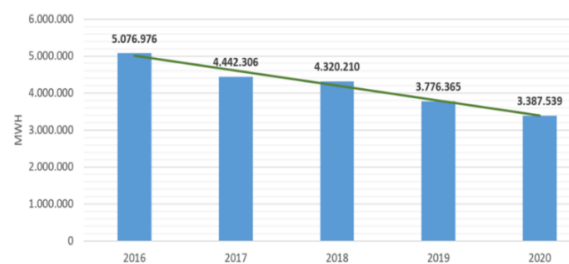
While the previous factsheet covered the years 2016 and 2017, this version revisits those years to address both the increased participation of Member States that recently joined and the UK's departure². In addition, this updated version is adapted to the most recent models set by Eurostat, achieving reporting harmonisation and compatibility.

In all cases, the results provide aggregated data only to ensure maximum confidentiality.

Annual comparisons are presented in absolute figures.

Electricity Consumption

Graph below shows electricity purchased from grid (MWh).



¹ 26 participating Member States (AT, BE, CY, CZ, DE, EE, EL, ES, FI, FR, HR, HU, IE, IT, LT, LU, LV, MT, NL, NO, PL, PT, RO, SE, SI, SK).

² UK's contributions for the years 2016 to 2020 have been removed from the calculations, to ensure consistency of data going forward.

In 2020, electricity purchased from grid (26 pMS) was 33,27% lower than in 2016

	2016 (MWh)	2020 (MWh)	Δ (2016-2020) (MWh)	(%)
Total electricity	5.076.976	3.387.539	-1.689.437	-33,27

In 2020, onsite generation (PV + CPP) was 21,5% higher than in 2016

	2016 (MWh)	2020 (MWh)	Δ (2016-2020) (MWh)	(%)
Total electricity	49,67	63,28	-13,61	21,5

Natural gas purchased by armed forces of 26 pMS

	2016 (MWh)	2020 (MWh)	Δ (2016-2020) (MWh)	(%)
Natural gas purchased	4.632,49	2.357,92	-2.274,57	-49,10

Heating sources and current trends (all sources)

	2016	2020	Δ (2016-2020)	(%)
Natural gas (MWh)	4.632,49	2.357,92	-2.274,57	49
Fuel oil (Kt)	54,38	17,48	-36,90	68
District heating (imported) MWh	1.928	818	-1.110	58
Coal (Kt)	55.381,8	0	-55.381,8	100
Gasoil / marked diesel (Kt)	19.539.960	44.707.621	25.167	56
LPG (Litres)	1.335.564	1.072.431	-263.133	20
Wood pellets (Kt)	16,33	17,89	1,56	9
Wood chips (MWh)	70.439	45.769	-24.670	35
Manufactured ovoids (³ (Kt))	3	1,8	-1,2	41
Biogas (MWh)	2.400	2.300	-100	4
Kerosene (Litres)	10.832.308	8.980.384	-1.851.924	17
Wood briquettes (Kt)	0,9	1,65	0,75	45
Solar thermal (MWh)	170.3	726	555,70	76

Conclusions

All 26 pMS have provided their national defence energy data sets from 2016 to 2020, representing 96.5 % of MS defence expenditure and affecting 91% of MS defence personnel. Based on the data, the overall trend indicates that Ministries of Defence (MoD) of pMS have reduced energy consumption while increasing self-production. The data shows how pMS MoDs rely heavily on supply from external sources and public grids to cover their energy needs (mainly electricity), generating only a small fraction of energy by either renewable sources or conventional power plants. Natural gas is the main source of energy for heating needs (around 50%), although it seems that consumption is decreasing and the infiltration of sustainable energy sources for heating, such as solar thermal, wood pellets or wood briquettes, is increasing.

Both the evolution of electricity consumption and heating energy need to be properly contextualised. In 2020, the EU's primary energy consumption (for all energy uses) experienced a historical drop following two years of moderate reductions. Final energy consumption (by end users) also saw a significant decrease, albeit less pronounced. It is not negligible to consider that the COVID-19 pandemic has had and is having a profound impact on energy consumption in pMS. The impact may have been significant on the defence sector, and it is necessary to discriminate the influence of these external circumstances. To confirm the trend, the data for the coming years is key.

³ Anthracite based solid fuel ovoids (or ovals) for use on open fires and in multi-fuel stoves.