

# ENERGY EFFICIENCY CRITERIA

Anlage VA-08-01-04  
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**MVO GmbH** operates an energy management system according to ISO DIN EN 50001. For energy-consuming equipment and machines, attention is paid to the best possible energy efficiency, while taking into account economic viability. Energy efficiency is also part of the supplier assessment. In addition to the investment costs, are also considered:

- ▶▶ Consumable costs throughout the expected useful life.
- ▶▶ Operating costs throughout the expected useful life.
- ▶▶ Life cycle cost.

## (1) Information on energy consumption

The following information on energy consumption are to be provided:

- ▶▶ Energy efficiency labelling of installations and / or components according to the Energy Labelling Directive (2010/30/EU).
- ▶▶ Energy consumption values / energy characteristics of installations and / or components per unit of time (for example, energy requirement per year) and the methodology of the calculation.
- ▶▶ Consumption estimates of the installation (thermal radiation, air, water).
- ▶▶ Efficiency and characteristics of installations and / or components in different operating conditions (for example stand-by consumption, etc.).
- ▶▶ Information on alternative to increase the energy efficiency.
- ▶▶ List of energy-relevant components (for example, heating power, drive power, etc.).
- ▶▶ Life cycle costs.

## (2) Energy efficiency requirements

Specific energy efficiency requirements on the following components:

| Components                               | Energy efficiency requirements                                                                                                                                                                   |
|------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Electric motor                           | At least <b>IE3</b> or <b>IE2 with frequency converter</b> or better                                                                                                                             |
| Pump                                     | <b>EEI &lt; 0.23</b> (pump power in relation to the required current consumption)                                                                                                                |
| Ventilator                               | < 4000 m <sup>3</sup> /h: <b>SFP2</b> or better<br>> 4000 m <sup>3</sup> /h: <b>SFP3</b> or better<br>(SFP - Specific Fan Power: absorbed electric power relative to the conveyed amount of air) |
| Lighting / Control light                 | LED-Technology or equivalent                                                                                                                                                                     |
| Equipment with Energy Consumption Labels | At least <b>A+</b> or better                                                                                                                                                                     |

### (3) Legal requirements

We adhere to applicable laws and expect our contractors to adhere to the applicable laws of the EU and the Federal Republic of Germany.

In particular, the Ecodesign Directive (2009/125/EU) must be complied with. Only components that are conforming to the law may be installed. The implementation is governed by the „Gesetz über die umweltgerechte Gestaltung energieverbrauchsrelevanter Produkte“ (EVPG). For all product groups must the applicable regulations (Directives) be observed.

Other applicable documents of the **Ecodesign Directive (2009/125 / EU)**:

- ▶▶ REGULATION (EU) 2017/1369 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 4 July 2017 setting a framework for energy labelling and repealing Directive 2010/30/EU
- ▶▶ Energieverbrauchsrelevante-Produkte-Gesetz – EVPG.
- ▶▶ Data sheets for the product groups, ENPL (<https://netzwerke.bam.de/Netzwerke/Navigation/DE/Evpg/EVPG-EPREL/evpg-eprel.html>)