

## Fulfilling EN 16001 „Energy management systems“ with EMAS III



## Introduction

“EN 16001 Energy management systems – Requirements with guidance for use” was published by the European Committee for Standardization (CEN) on the 1<sup>st</sup> of July 2009.

This new standard specifies the requirements for implementation of an energy management system. The standard aims to help organisations systematically evaluate their energy consumption in order to continuously improve energy efficiency, reduce costs and comply with relevant legislation.

EN 16001 essentially duplicates the environmental management system standard EN ISO 14001 but concentrates solely on energy issues. Due to the fact that EN ISO 14001 is (and remains) a central element of the EMAS-regulation<sup>1</sup>, only a few modifications - with regard to terminology related to energy efficiency and energy consumption – as well as some structural adaptations will normally be needed in order to meet the requirements of EN 16001 without carrying out any additional work.

Most EMAS registered organisations have already incorporated energy as an environmental aspect within their management system. In addition, their activities and achievements are reported to the public in their environmental statements. For that purpose it is usually necessary to provide evidence to show what improvements have been made systematically.

The validation of the data by the environmental verifier demonstrates that the EMAS organisation is on the “right track” and is committed to achieving continuous improvement of environmental performance at all levels and in all areas.

The following table in note form sets out the contents of the new energy management system standard EN 16001 and highlights the equivalent requirement in the EMAS Regulation. It indicates in column “Evaluation” where additional information is required to comply with EN 16001 and where in general the requirements are fulfilled by organisations, having considered energy as an environmental aspect within the EMAS system.

### Remarks:

The numbering in the EMAS column follows the arrangement of numbers in Annex II of the EMAS Regulation. It includes the contents of EN ISO 14001 as well as additional EMAS-related requirements (*italic*) which have to be met by the EMAS organisations.

On the 2<sup>nd</sup> of April 2009, the European Parliament reached agreement on the text of revisions to the EMAS regulation. The revised regulation was formally adopted on the 26<sup>th</sup> of October 2009 and is expected to be published in December 2009.

---

<sup>1</sup> REGULATION 761/2001 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on the voluntary participation by organisations in a Community eco-management and audit scheme (EMAS),

| EN 16001:2009 |   | EMAS III |   |                                     |
|---------------|---|----------|---|-------------------------------------|
| 3.1           | General requirements  | 4.1      | General requirements  | Evaluation <sup>2</sup>             |
|               | Define and document scope and boundaries of the energy management system  |          | Define and document scope of the environmental management system<br><i>Additional: related to sites</i>   | Fulfilled                           |
|               | Continual improvement of energy efficiency  |          | Continually improve an environmental management system<br><i>Additional: continual improvement of its environmental performance;<br/>Core indicator Energy efficiency</i> | Fulfilled                           |
| 3.2           | Energy policy   | 4.2      | Environmental policy  |                                     |
| a             | Define scope and boundaries of the energy management system   |          | Define scope of the environmental management system   | Fulfilled                           |
| b             | Appropriate to the organisation's energy use  | a        | Appropriate to the nature, scale and environmental impacts  | Fulfilled                           |
| c             | Commitment to continual improvement in energy efficiency  | b        | Commitment to continual improvement and prevention of pollution<br><i>Additional: commit to the continual improvement of its environmental performance (Annex II B 3)</i> | Add commitment to energy efficiency |
| d             | Commitment to ensure availability of information and all necessary resources to achieve objectives and targets    |          | Statement not required in policy<br><i>Additional: environmental statement as complete information</i>  | To be added                         |
| e             | Framework for setting and reviewing energy objectives and targets   | d        | Framework for (...) environmental objectives and targets  | Fulfilled                           |
| f             | Commitment to comply with all applicable requirements relating to its energy aspects                              | c        | Environmental aspects   | Fulfilled                           |
| g             | Documented, implemented, maintained and communicated to all persons working for and on behalf of the organisation | e and f  | The same  | Fulfilled                           |
| h             | Regularly reviewed and updated  |          | Not mentioned here, but requirement of management review  | Fulfilled                           |
| l             | Available to the public   | g        | The same  | Fulfilled                           |

<sup>2</sup> See comment on page „Introduction“

| EN 16001:2009 |  | EMAS III     |  |   |
|---------------|--|--------------|--|---|
| <b>3.3</b>    | <b>Planning</b>  | <b>4.3</b>   | <b>Planning</b>  |   |
| <b>3.3.1</b>  | <b>Identification and review of energy aspects</b>   | <b>4.3.1</b> | <b>Environmental aspects</b>   |   |
|               | Initial review of energy aspects;<br>update at predefined intervals;<br>prioritise significant energy aspects for further analysis<br><br>reviews of energy aspects shall include the following: |              | Identify the environmental aspects;<br>determine significant environmental aspects;<br>ensure that the significant environmental aspects are taken into account in its EM<br><br><i>Additional: environmental review of all environmental aspects (direct and indirect);</i><br><br><i>Register of those identified as significant (Annex I)</i> | Fulfilled   |
| a             | Past and present energy consumption and energy factors based on measurement and other data   |              | <i>Consider existing data on material and energy inputs, discharges, wastes and emissions in terms of risk (Annex I 3. b)</i>  | Usually fulfilled   |
| b             | Identification of areas of significant energy consumption, in particular of significant changes in energy use during the last period   |              | <i>Direct environmental aspects relate to energy (Annex I 2. a)</i><br><br><i>Description of the criteria for assessing the significance of the environmental impact (Annex I 3. a)</i>  | Mainly Fulfilled;<br><br>Add retrospection, if applicable |
| c             | Estimate of expected energy consumption during the following period  |              |  | To be added   |
| d             | Identification of all persons working for and on behalf of the organisation whose actions may lead to significant changes in energy consumption  |              |  | To be added   |
| e             | Identification and prioritisation of opportunities for improving energy efficiency   |              | <i>Environmental audit, environmental programme, management review</i>   | Usually Fulfilled   |
|               | Register of opportunities for saving energy  |              | <i>Environmental programme</i>   | Usually Fulfilled   |
| <b>3.3.2</b>  | <b>Legal obligations and other requirements</b>  | <b>4.3.2</b> | <b>Legal and other requirements</b>  |   |
|               | Mostly identical to EN ISO 14001   |              | <i>Additional: Organisations shall provide material or documentary evidence showing that the organisation complies with all applicable legal requirements relating to the environment (Art.4 No 4 and Annex II B.2 "Legal compliance")</i>   | Fulfilled   |

| EN 16001:2009 |  | EMAS III     |   |
|---------------|--|--------------|---|
| <b>3.3.3</b>  | <b>Energy objectives, targets and programme(s)</b>   | <b>4.3.3</b> | <b>Objectives, targets and programme(s)</b>   |
|               | Energy objectives and targets;<br>Specific targets for those controllable parameters that have a significant impact on energy efficiency   |              | Environmental objectives and targets;<br>Take into account its significant environmental aspects<br><br><i>Additional (environmental statement): a description of the environmental objectives and targets in relation to the significant environmental aspects and impacts (Annex IV B. d)</i>   |
|               | Energy objectives and target(s) shall be measurable and documented;<br>time frame set for achievement  |              | The objectives and targets shall be measurable, where practicable<br><br><i>Additional (environmental statement): summary of the data available on the performance of the organisation against its environmental objectives and targets ... Reporting shall be on the core indicators and on other relevant existing environmental performance indicators (Annex IV B. e)</i> |
|               | Updated at pre-determined intervals  |              | Maintain<br><br><i>Additional: updated environmental statement</i>  |
| <b>3.4</b>    | <b>Implementation and operation</b>  | <b>4.4</b>   | <b>Implementation and operation</b>   |
| <b>3.4.1</b>  | <b>Resources, roles, responsibility and authority</b>  | <b>4.4.1</b> | <b>Resources, roles, responsibility and authority</b>   |
|               | Mostly identical to EN ISO 14001   |              | Fulfilled   |
| <b>3.4.2</b>  | <b>Awareness, training and competence</b>  | <b>4.4.2</b> | <b>Competence, training and awareness</b>   |
|               | Management representative shall be appropriately competent and qualified in energy and energy efficiency improvements  |              | Management representative is not addressed  |
|               | Identify training needs for energy management system   |              | Identify training needs for environmental management system   |
|               | Ensure that each level of management is informed and appropriately trained in the field of energy management; they should be able to establish pertinent objectives and targets and choose appropriate energy management tools and methodologies |              | Any person(s) performing tasks for the organisation or on its behalf that have the potential to cause a significant environmental impact(s)<br><br><i>Additional: Employee involvement (Annex II B. 4)</i>  |
|               |  |              | Fulfilled<br><br>Mainly Fulfilled<br><br>Make sure all levels are trained   |

| EN 16001:2009 |  | EMAS III     |  |  |
|---------------|--|--------------|--|--|
| <b>3.4.3</b>  | <b>Communication</b>   | <b>4.4.3</b> | <b>Communication</b>   |  |
|               | <p>Only internal communication</p> <p>Communication shall ensure that all persons working for and on behalf of the organisation can take an active part in energy management and improvement of the energy performance</p>   |              | <p>Receiving, documenting and responding to relevant communication from external interested parties</p> <p>No purpose for communication mentioned</p> <p><i>Additional: employees shall be involved in the process aimed at continually improving the organisation's environmental performance (Annex II B.4 3);<br/>Environmental statement</i></p>   | Fulfilled  |
| <b>3.4.4</b>  | <b>Energy management system documentation</b>  | <b>4.4.4</b> | <b>Documentation</b>   |  |
|               | <p>Not as detailed as EN ISO 14001</p> <p>Term: „core elements“</p>  |              | <p>More detailed than EN 16001</p> <p>Term „main elements“</p>   | Fulfilled  |
| <b>3.4.5</b>  | <b>Control of documents</b>  | <b>4.4.5</b> | <b>Control of documents</b>  |  |
|               | Records and documents  |              | Only documents mentioned here, requirements on records in 4.5.4  |  |
|               | <p>Some different terms, e.g.:</p> <ul style="list-style-type: none"> <li>traceable, can be located;</li> <li>periodically reviewed and revised;</li> <li>current versions available at all relevant locations;</li> <li>easily accessible, protected against damage, loss or destruction;</li> <li>obsolete documents are retained for legal and/or knowledge preservation purposes and suitably identified, or removed as appropriate;</li> </ul> <p>retention time shall be established and documented;</p> |              | <p>Some different terms, e.g.:</p> <ul style="list-style-type: none"> <li>review and update as necessary;</li> <li>relevant versions of applicable documents are available at points of use;</li> <li>remain legible and readily identifiable;</li> <li>prevent the unintended use of obsolete documents and apply suitable identification to them if they are retained for any purpose</li> </ul> | <p>Mostly Fulfilled</p> <p>Add rule for retention time</p> |
| <b>3.4.6</b>  | <b>Operational control</b>   | <b>4.4.6</b> | <b>Operational control</b>   |  |
|               | Prevent situations that could lead to deviation from the energy policy, energy objectives and energy targets   |              | Documented procedure(s) to control situations where their absence could lead to deviation from the environmental policy, objectives and targets  | Fulfilled  |
|               | Set criteria for operation and maintenance of installations, equipment buildings and facilities  |              | Stipulating the operating criteria in the procedure(s)   | Add special criteria if applicable                         |

| EN 16001:2009 |  | EMAS III     |   |
|---------------|--|--------------|---|
| <b>3.4.6</b>  | <b>Operational control et seq.</b>   | <b>4.4.6</b> | <b>Operational control et seq.</b>  |
|               | Energy considerations in acquisition and purchase;<br><br>inform suppliers that purchasing is partly evaluated on the basis of energy efficiency   |              | Procedures related to the identified significant environmental aspects of goods and services used by the organisation;<br><br>communicate applicable procedures and requirements to suppliers, including contractors<br><br><i>Additional: significant environmental aspects associated with their procurement procedures (Annex I b)</i> |
|               | Evaluation of energy consumption when considering the design, change or restoration of all assets which have the potential to significantly affect energy consumption, including buildings |              | <i>Where a registered organisation plans to introduce substantial changes, the organisation shall carry out an environmental review of these changes, including their environmental aspects and impacts (Art. 8)</i>  |
|               | Appropriate communication to personnel, and people acting on behalf of the organisation and other relevant parties   |              | <i>Internal and external communication required</i>   |
|               | <b>Emergency preparedness and response</b><br>not mentioned in EN 16001  | <b>4.4.7</b> | <b>Emergency preparedness and response</b>  |
| <b>3.5</b>    | <b>Checking</b>  | <b>4.5</b>   | <b>Checking</b>   |
| <b>3.5.1</b>  | <b>Monitoring and measurement</b>  | <b>4.5.1</b> | <b>Monitoring and measurement</b>   |
|               | Establish and describe monitoring, measuring and targeting requirements of its energy management programme;<br><br>an energy metering plan shall be defined and implemented                |              | The organisation shall establish, implement and maintain a procedure(s) to monitor and measure, on a regular basis, the key characteristics of its operations that can have a significant environmental impact  |
|               | Accuracy and repeatability of monitoring and measuring equipment used shall be appropriate to the task<br><br>Associated records shall be maintained                                       |              | Use and maintain calibrated or verified monitoring and measurement equipment<br><br>Retain associated records   |
|               | At defined intervals, the organisation shall monitor, measure and record significant energy consumption and associated energy factors  |              | Document information to monitor performance, applicable operational controls and conformity with the organisation's environmental objectives and targets  |

| EN 16001:2009 |   | EMAS III     |   |
|---------------|---|--------------|---|
| <b>3.5.1</b>  | <b>Monitoring and measurement et seq.</b>   | <b>4.5.1</b> | <b>Monitoring and measurement et seq.</b>   |
|               | Establish relationships in each practicable instance between energy consumption and its associated energy factors and assess actual versus expected energy consumption at defined intervals |              | <i>Core indicator Energy efficiency (Annex IV C)</i><br>Add, if applicable  |
|               | Maintain records of all significant accidental deviations from expected energy consumption, including causes and remedies   |              | Add, if applicable  |
|               | Relationships between energy consumption and energy factors shall be reviewed and revised if necessary  |              | Add, if applicable  |
|               | Organisation shall compare their energy performance indicators against similar organisations or situations, externally and internally (wherever possible)                                   |              | Add, if applicable  |
| <b>3.5.2</b>  | <b>Evaluation of compliance</b>   | <b>4.5.2</b> | <b>Evaluation of compliance</b>   |
|               | Same requirements as EN ISO 14001   |              | <i>Additional: organisation shall provide material or documentary evidence showing that the organisation complies with all applicable legal requirements relating to the environment (Art.4 No 4)</i><br><br><i>Control entities: verifier, competent body, public authority</i><br>Fulfilled |
| <b>3.5.3</b>  | <b>Nonconformity, corrective action and preventive action</b>   | <b>4.5.3</b> | <b>Non-conformity, corrective action and preventive action</b>  |
|               | Identify and manage non-conformance;<br><br>No special requirements   |              | Procedure(s) for dealing with actual and potential non-conformity(ies) and for taking corrective action and preventive action<br><br>Following some special requirements<br><br>More detailed than EN 16001<br>Fulfilled  |
| <b>3.5.4</b>  | <b>Control of records</b>   | <b>4.5.4</b> | <b>Control of records</b>   |
|               | Mostly the same as EN ISO 14001   |              | Mostly the same as EN 16001<br>Fulfilled  |

| EN 16001:2009 |  | EMAS III     |   |   |
|---------------|--|--------------|---|---|
| <b>3.5.5</b>  | <b>Internal audit of the energy management system</b>  | <b>4.5.5</b> | <b>Internal audit</b>   |   |
|               | Beginning of this Chapter is mainly the same as EN ISO 14001   |              | Mainly the same as EN 16001   | Fulfilled                                 |
|               | Responsible management shall ensure that actions are taken without undue delay to eliminate detected nonconformities and their causes;<br>Follow-up activities shall include the verification of the actions taken and the reporting of verification results |              | <i>Nonconformities have to be eliminated prior to first registration</i><br><br>Dealing with nonconformities is mentioned in 4.5.3<br><br><i>Additional: Annex III Internal environmental audit</i> | Fulfilled                                 |
|               | Audits are carried out by, or at the request of, the organisation itself, for internal purposes and may be the basis for a self declaration of conformance to this standard  |              | Not mentioned but practice.<br><br>No self declaration possible   | Fulfilled                                 |
|               | Results reported to top management   |              | Provide information on the results of audits to management  | Fulfilled                                 |
| <b>3.6</b>    | <b>Review of the energy management system by top management</b>  | <b>4.6</b>   | <b>Management review</b>  |   |
| <b>3.6.1</b>  | <b>General</b>   |              |   |   |
|               | Mostly the same as EN ISO 14001  |              | Mostly the same as EN 16001   | Fulfilled                                 |
| <b>3.6.2</b>  | <b>Inputs to management review</b>   |              |   |   |
|               | Mostly the same as EN ISO 14001;<br>additional: projected energy consumption for the following period  |              | Mostly the same as EN 16001   | Take energy consumption into account      |
| <b>3.6.3</b>  | <b>Outputs from management review</b>  |              |   |   |
|               | Mostly the same as EN ISO 14001;<br>additional: allocation of resources  |              | Mostly the same as EN 16001   | Take allocation of resources into account |