

Minimum criteria for energy audits

(To comply with the European Union (Energy Efficiency) Regulations 2014 (SI 426 of 2014), as amended by SI 646 of 2016 and SI 599 of 2019)

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1. Purpose of this document

This document sets out the minimum criteria for energy audits required to be undertaken pursuant to the European Union (Energy Efficiency) Regulations 2014 (SI 426 of 2014), as amended¹ (the “**Regulations**”).

SEAI has established and published on its website these transparent and non-discriminatory minimum criteria pursuant to Regulation 11(2) of the Regulations to cover buildings or groups of buildings, industrial operations or installations, including transportation. These criteria are based on guidelines as laid out in Annex VI of the Energy Efficiency Directive, Directive 2012/27/EU² of the European Parliament and of the Council on energy efficiency (the “**EED**”), which Annex is included as Appendix A to this document.³

2. Introduction

The EED was transposed into Irish law by the Regulations and includes several measures intended to increase the energy efficiency of companies that are not SMEs and applicable public bodies. Additional information on these measures is available on the SEAI website⁴.

One of these measures is the requirement in Part 3 of the Regulations for certain companies and public bodies (together referred to as “**obligated entities**”) to carry out regular energy audits (the “**energy audit requirement**”). Failure to do so is an offence.

2.1. Energy audit requirement

The energy audit requirement applies to companies that are not SMEs and to certain public bodies. Those with an energy audit requirement must undertake an energy audit or ensure their energy management system meets the minimum criteria set out in this document.

The first audit of obligated entities subject to the energy audit requirement was required to take place prior to 5th December 2015, and then every four years thereafter.

Prior to amendments introduced in 2019⁵, the energy audit requirement did “*not apply to persons holding a greenhouse gas emissions permit granted in accordance with Regulation 7 of the European Communities (Greenhouse Gas Emissions Trading) Regulations 2012 (S.I. No. 490 of 2012)*”. However, as

¹ Amended by the European Union (Energy Efficiency) (Amendment) Regulations 2016 (SI 646 of 2016) and the European Union (Energy Efficiency) (Amendment) Regulations 2019 (SI 599 of 2019)

² <https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32012L0027&from=EN>

³ SEAI’s Energy Audit Handbook is available here <https://www.seai.ie/publications/SEAI-Energy-Audit-Handbook.pdf>

⁴ <https://www.seai.ie/business-and-public-sector/energy-auditing/>

⁵ European Union (Energy Efficiency) (Amendment) Regulations 2019 (SI 599 of 2019)

amended in 2019, this exemption is removed. Where the energy audit requirement now applies to such companies, their first audit must take place prior to 30th June 2020, and then every four years thereafter.

2.1.1. Companies that are not SMEs

Based on the definition of SMEs in the Regulations, companies that are not SMEs comprise of those that are above either of the thresholds set out below:

- Threshold 1 (T1) – A company with 250 or more employees.
- OR
- Threshold 2⁶ (T2) – A company with an annual turnover⁷ in excess of €50 million and an annual balance sheet total in excess of €43 million⁸.

In the case of groups of companies operating in Ireland, the energy audit requirement is on each registered company in the group where they are above T1 or T2.

2.1.2. Public sector

In the case of the public sector, the energy audit requirement applies to a public body with individual buildings with a total useful floor area of more than 500m² or an annual energy spend of more than €35,000. However, this requirement does not apply to schools who–

- a) have provided their energy data to the SEAI through the Monitoring and Reporting Mechanism provided for in the Regulations; and
- b) who the SEAI are satisfied are pro-actively engaged in exemplar energy management⁹ as defined by the SEAI.

2.2. Energy audits

To comply with the Regulations, energy audits must be carried out either by:

- (i) independent registered energy auditors under the national registration scheme for energy auditors established and operated by SEAI (the “**Energy Audit Scheme**”) ¹⁰; or
- (ii) in-house energy auditors provided they are registered under the Energy Audit Scheme and who shall provide audit details to the SEAI upon request.

⁶ A legal entity in T2 could have fewer than 250 employees.

⁷ The amount selected for turnover is calculated excluding value added tax and other indirect taxes (ref. Commission Recommendation 2003/361/EC, Art. 4).

⁸ This is the figure before deducting current and long-term liabilities, so it is the gross figure and not the net.

⁹ Exemplar energy management means becoming more organised and strategic in your approach and completing appropriate energy management training under the SEAI’s Public Sector Programme

¹⁰ <https://www.seai.ie/business-and-public-sector/energy-auditing/>

In addition, energy audits must be carried out in an independent manner, on the basis of the minimum criteria set out in this document, and implemented under programmes the SEAI may designate as meeting the minimum requirements of the EED.

2.3. Notification requirement

The EED also places an obligation on Ireland to report on the number of obligated entities within its territory to which the energy audit requirement applies, and the number of audits carried out. To facilitate this, the Regulations introduce a new notification requirement. Obligated entities must report the fact of energy audit completion to SEAI in accordance with the guidelines of the SEAI in that behalf

SEAI has developed an online notification system to report compliance, and further details are available on the SEAI website¹¹.

Compliance notification reports shall be submitted once the Registered Energy Auditor has confirmed that the energy audit is complete, and the audit report is available to facilitate a Quality Assurance (QA) assessment by SEAI, if required.

This notification report can be completed by the Registered Energy Auditor, the obligated entity, or an agent acting on behalf of the obligated entity. However, the obligated entity is fully responsible for ensuring the accuracy of information provided and its final submission.

SEAI's online notification system also provides entities with the opportunity, where relevant, to notify SEAI that the obligation does not apply to them on the basis that they do not meet the thresholds for the energy audit requirement. This facility is included to assist SEAI with overall scheme monitoring and management.

3. Applicability of minimum criteria

In all cases, the use of the terms 'energy audit' and 'audit' in this document refer to standalone energy audits and energy audits that are part of a broader environmental audit undertaken during certification to an energy or environmental management system according to the relevant European or international standard. The minimum criteria set out in this document, therefore, apply to both standalone energy audits and energy audits that are part of a broader environmental audit.

If an obligated entity seeks to comply with its energy audit requirement by having a valid certified energy or environmental management system, then it must demonstrate that this management system includes an energy audit that meets the minimum criteria set out in this document.

4. Minimum criteria for energy audits

The minimum criteria are as follows:

- (i) Energy audits shall be based on four high-level principles – see section 4.1;

¹¹ <https://www.seai.ie/business-and-public-sector/energy-auditing/eed-compliance-form/>

- (ii) Energy audits shall allow detailed and validated calculations for the proposed measures to provide clear information on potential savings – see section 4.2; and
- (iii) The data used in energy audits shall be storable for historical analysis and tracking performance – see section 4.3.

In addition, where the obligated entity being audited is in close proximity to an existing or planned district heating or cooling network it shall carry out an assessment of the technical and economic feasibility of the connection to that network as part of the energy audit.

4.1. High level principles

4.1.1. *Energy audits shall be based on up-to-date, measured, traceable operational data on energy consumption and (for electricity) load profiles*

This data shall:

- a) Include energy use data for the most recent 12-month period of operation prior to the audit;
- b) Take account of seasonal, occasional or other irregular factors or unusual business patterns that drive energy consumption;
- c) Be verifiable by being traceable back to documented recordings from measurement devices, to invoices or to other equivalent documented records – in appropriate physical units of consumption, e.g. kWh, litres, tonnes¹²; and
- d) Provide sufficient detail of electrical data to generate a load profile.

4.1.2 *Energy audits shall comprise a detailed review of the energy consumption profile of buildings or groups of buildings, industrial operations or installations, including transportation*

This detailed review shall:

- a) Incorporate a systematic analysis of the consumption profile for,
 - each energy/fuel type consumed within the scope of the audit, and
 - each activity, process, function, building, site, facility, fleet or energy service that is a significant energy user within the scope of the audit;
- b) Where possible, be broken down to a level of granular detail that is appropriate for the scale and nature of the consumption being analysed, especially for electricity consumption, e.g. day/night data, quarter-hourly consumption for large users and/or monthly profiles; and
- c) Provide graph(s), chart(s) or table(s) showing periodic energy use pattern applied to available data.

¹² In exceptional circumstances and where records are unavailable then some degree of estimation or extrapolation is allowed, please refer to the SEAI website for guidance.

4.1.3 Energy audits shall, build, whenever possible, on life-cycle cost analysis (LCCA) instead of Simple Payback Periods (SPP) in order to take account of long-term savings, residual values of long-term investments and discount rates

- a) Calculations used to evaluate energy savings and associated investment opportunities should utilise the LCCA approach rather than the Simple Payback Period (SPP) approach. The recommendations will be based on detailed and validated calculations for proposed measures taking into account the full service life of the project.
- b) Audits meeting this criterion will thus provide clear and reliable information on potential investments and savings, by calculating net present values, cash flows and the resultant discounted savings over time. This enhances considerably the quality and value of the recommendations and hence the audit.
- c) Financial analysis of energy saving benefits of projects based on the simple payback period approach can be used for simple measures but justification for this approach should be given.

4.1.4 Energy audits shall be proportionate and sufficiently representative to permit the drawing of a reliable picture of overall energy performance and the reliable identification of the most significant opportunities for improvement

- a) Proportionate: the audited consumption shall be a significant part, but not necessarily all, of the obligated entity's total consumption. **The minimum requirement is set at 85% of the delivered energy to the site.**
- b) Representative: the audit results should be applicable not just for the energy consumption explicitly analysed in detail by the audit, but also more widely across the obligated entity. It should be representative of the current and recent operation of all energy users within the scope of the audit. Clustering and sampling can be used where appropriate.
- c) Opportunities for improvement: the audit should identify and analyse the most significant opportunities for improving energy efficiency across the obligated entity with some degree of prioritisation.

4.2. Energy audits shall allow detailed and validated calculations for the proposed measures so as to provide clear information on potential savings

The following are mandatory minimum requirements:

- a) Energy audits shall be based on robust *key data* and incorporate sufficiently detailed calculations to provide clear quantified information for decision makers with respect to the energy savings and costs associated with specific opportunities for energy-efficiency measures within the obligated entity;
- b) The *key data* for each energy audit shall comprise the complete dataset of energy consumption analysed, all other input data analysed for the audit, relevant audit assumptions, the audit calculations and all intermediate and final calculated outputs and results from the audit;

- c) All key data shall be documented such that they can be verified and/or validated in due course. Such key data documentation may remain confidential to the obligated entity; and
- d) Evidence of the key data may be excluded from the report as it may be confidential, but the energy auditor shall provide some justification for compliance checking and quality assurance.

4.3. The data used in energy audits shall be storable for historical analysis and tracking performance

The following is a mandatory minimum requirement:

- a) Records of the key data shall be retained by the obligated entity for at least four years after the completion of the energy audit. The arrangements for recording and storing the key data shall be appropriate and sufficient to enable the obligated entity to readily undertake subsequent historical analysis of the data during this period or to make available for the next audit period.

Appendix A: Directive 2012/27/EU – Annex VI

Minimum criteria for energy audits including those carried out as part of energy management systems

The energy audits referred to in Article 8 shall be based on the following guidelines:

- (a) be based on up-to-date, measured, traceable operational data on energy consumption and (for electricity) load profiles;
- (b) comprise a detailed review of the energy consumption profile of buildings or groups of buildings, industrial operations or installations, including transportation;
- (c) build, whenever possible, on life-cycle cost analysis (LCCA) instead of Simple Payback Periods (SPP) in order to take account of long-term savings, residual values of long-term investments and discount rates;
- (d) be proportionate, and sufficiently representative to permit the drawing of a reliable picture of overall energy performance and the reliable identification of the most significant opportunities for improvement.

Energy audits shall allow detailed and validated calculations for the proposed measures so as to provide clear information on potential savings.

The data used in energy audits shall be storable for historical analysis and tracking performance.