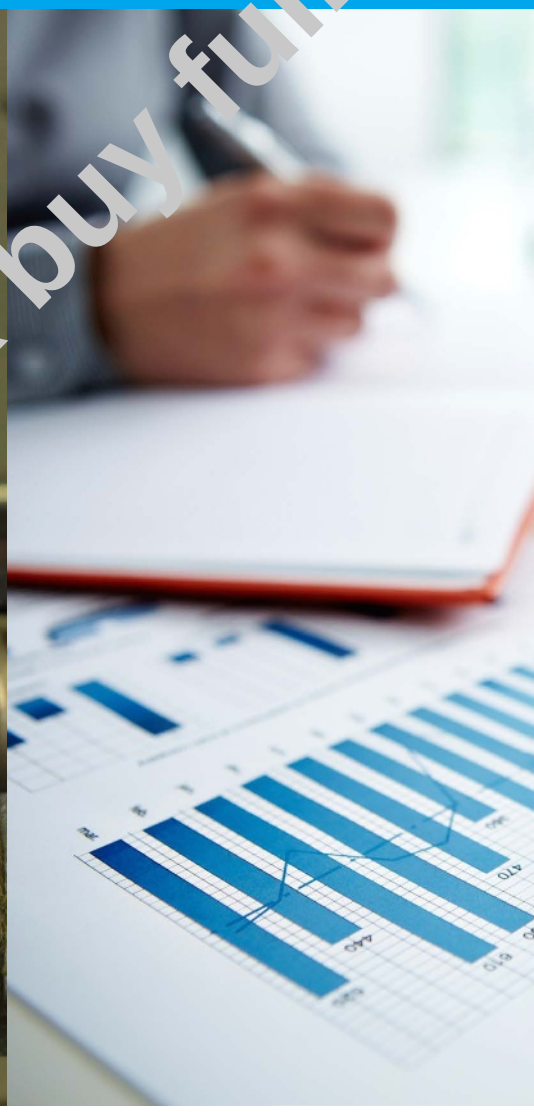
PAS 51215:2014

Energy efficiency assessment – Competence of a lead energy assessor – Specification



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Contents

Foreword

This PAS was sponsored by the Department of Energy & Climate Change (DECC). Its development was facilitated by BSI Standards Limited and it was published under licence from the British Standards Institution. It came into effect on 26 June 2014.

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BSI also wishes to acknowledge the following organizations that were involved in the development of this PAS as members of the steering group:

- Association of British Certification Bodies (ABCB);
- Carbon Trust;
- Chartered Institution of Building Services Engineers (CIBSE);
- Co-opted;
- Department of Energy & Climate Change (DECC);
- EEF, the manufacturers organisation;
- Energy Institute;
- Energy Managers' Association (EMA);
- Energy Services and Technology Association (ESTA);
- Environment Agency;
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- Institute of Environmental Management and Assessment (IEMA);
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- The Building Futures Group;
- Verco.

Comments from a wider range of interested parties were invited and received by BSI. The expert contributions made by the organizations and individuals consulted in the development of this PAS are gratefully acknowledged.

This PAS is not to be regarded as a British Standard. It will be withdrawn upon publication of its content in, or as, a British Standard.

The PAS process enables a specification to be rapidly developed in order to fulfil an immediate need in industry. A PAS can be considered for further development as a British Standard, or to institute part of the UK input into the development of a European or International Standard.

Relationship with other publications

There are a number of standards in existence and in development in the field of energy audits and energy assessments. PAS 51215 fits into this body of work with its focus on the competencies required of a lead energy assessor, rather than on the energy assessments or energy audits themselves.

The BS EN 16247 series is a European standardization series, which covers different aspects of energy audits. It is intended that PAS 51215 will complement and coexist with this suite of standards.

BS EN ISO 50001 specifies requirements on energy management systems and also gives guidance for their use. ISO 50002[1)], the second in this suite of international standards covers general requirements common to all energy audits. It is also intended that PAS 51215 will complement and coexist with these standards.

[1)] In preparation.

Presentational conventions

The provisions of this standard are presented in roman (i.e. upright) type. Its requirements are expressed in sentences in which the principal auxiliary verb is "shall".

Commentary, explanation and general informative material is presented in coloured italic type. They do not constitute normative elements, and as such are not requirements.

The introduction and informative annexes (Annex A, Annex B and Annex C) also do not constitute a normative element of the PAS and as such are not requirements.

Contractual and legal considerations

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Compliance with this PAS cannot confer immunity from legal obligations.

Statement by DECC

The Energy Savings Opportunity Scheme (ESOS) is the UK's approach to implementing Article 8 of the EU Energy Efficiency Directive (2012/27/EU) [1], which requires all Member States to introduce a programme requiring large enterprises to conduct regular energy efficiency assessments by appropriately qualified and/or accredited individuals. Those individuals can be either in-house experts or external resources such as consultants and energy service providers. The Government aims for PAS 51215 to be applied to "lead energy assessors" conducting ESOS compliant energy efficiency assessments. The Department of Energy & Climate Change (DECC) sponsored BSI Standards Limited to develop PAS 51215 to set out a clear level of competence for "lead energy assessors" who will be responsible for ensuring that quality energy efficiency assessments are carried out in accordance with the statutory requirements set out in secondary legislation by the Government.

DECC does not intend for ESOS and PAS 51215 t replace other schemes, such as those supporting t Energy Performance of Buildings Directive (EPBD, [2] or the Green Deal[2)].

***NOTE** Further details on ESOS can be found here: https://www.gov.uk/government/consultations/energy-savings-opportunity-scheme.*

[2)] See the Government website for further information: https://www.gov.uk/green-deal-energy-saving-measures/overview.

0 Introduction

0.1 Motivation behind the creation of PAS 51215

Article 8(4) of the European Union Energy Efficiency Directive (2012/27/EU) [1] requires all Member States to introduce a programme requiring large enterprises to conduct regular energy audits by appropriately qualified and/or accredited individuals.

Such individuals may be either in-house experts or external resources such as consultants and energy service providers. The UK Government's approach to implementing Article 8(4) of this Directive has been to set up the Energy Savings Opportunity Scheme (ESOS) which covers energy assessments.

These energy assessments could cover buildings or groups of buildings, industrial operations or installations, including transportation.

Within ESOS, those individuals deemed capable of conducting an energy efficiency assessment, leading an assessment team, and/or reviewing and approving the outcome of an organization-wide energy efficiency assessment, or series of energy efficiency assessments, are referred to as lead energy assessors.

NOTE 1 *Further information about the EU Energy Efficiency Directive (2012/27/EU) can be found at http://ec.europa.eu/energy/efficiency/eed/eed_en.htm.*

NOTE 2 *A "large enterprise" is also referred to as a "large business" or "large organization". A large enterprise is generally considered to be that which falls outside of the definition in European legislation for a Small or Medium Enterprise (SME), thus a large enterprise is a business having either over 250 employees, or both a turnover of above €50 million (approx. £42.5 million) and assets over €43 million (approx. £36.5 million). Further information regarding the definition of a large enterprise with relation to ESOS can be found on DECC's webpage, see [3] in the bibliography.*

In order to help large enterprises to comply with the Directive and the requirements of ESOS, the Department of Energy & Climate Change (DECC) has sponsored the BSI Standards Limited to develop a PAS.

PAS 51215 (the number for which is derived from the initial EU deadline for undertaking all energy audits, 5 December 2015), was developed through a consensus driven, formal development process, with involvement from key stakeholders and a public consultation.

DECC's aim for PAS 51215 is to establish clear competencies for lead energy assessors. As with other specifications published by BSI, the requirements of the PAS are expressed in sentences using the word "shall". Information, guidance and recommendations are not requirements within the PAS. These are given in notes and commentary text, in the introduction and informative annexes (Annex A, Annex B and Annex C).

It is important to note that while the motivation behind the creation of PAS 51215 was to facilitate compliance with the Directive, and to create a specification that is applicable to lead energy assessors conducting ESOS compliant energy efficiency assessments, it is not exclusively tied to either the Directive or ESOS itself.

NOTE 3 *Further details on ESOS can be found at https://www.gov.uk/government/consultations/energy-savings-opportunity-scheme.*

0.2 Why conduct an energy efficiency assessment?

An energy efficiency assessment is one of the methods an organization can use to improve its energy performance, including its energy use, energy consumption and energy efficiency. An organization might wish to use an energy efficiency assessment for the following reasons, though it is important to note that this is not an exhaustive list.

a) To identify and evaluate opportunities for improvement arising from good housekeeping, procedural changes, behaviour changes, and requirements for additional monitoring techniques.

b) To evaluate the energy performance of a component (e.g. air compressor, boiler, steam trap, pump, fan, a component within a manufacturing plant, building or vehicle fleet) and to identify opportunities for improvement.

c) To evaluate the energy performance of a system and to identify opportunities for improvement, e.g. through assessments on the generation plant, its distribution and end-use for a range of utilities, through assessment on a series of components making up a unit operation, or through assessments on all unit operations that makes up the whole building, manufacturing plant or vehicles and/or fleet.

d) To evaluate the technical feasibility and economic viability of specific opportunities for the reduction of energy consumption within the organization.

e) To identify and evaluate opportunities for the reduction of energy consumption arising from an organization's supply chain.

f) To verify the technical and financial suitability of a proposal prepared by an equipment manufacturer or service provider.

g) To assess and verify that all significant opportunities for improvement in energy efficiency have been identified and assessed.

0.3 Barriers to reducing energy use and energy consumption, and solutions

DECC's *Energy Efficiency Strategy 2012* [4] describes two of the most important barriers to reducing energy use and energy consumption, and to improving energy efficiency: lack of access to trusted information regarding energy efficiency, and underestimating the value that energy efficiency can bring to an organization.

Energy efficiency assessments conducted or overseen by a lead energy assessor can help overcome these barriers through providing access to trusted information and helping organizations understand the value of energy efficiency.

A harmonized approach to energy efficiency assessments can increase the visibility, transparency and comparability of an energy efficiency assessment and the quantified improvement opportunities, thus reducing uncertainties in organizational expectations, increasing confidence in the output from an energy efficiency assessment and reducing the risk to investment by organizations.

0.4 The lead energy assessor role and its responsibilities

The role of a lead energy assessor entails having the relevant competencies to carry out, lead and/or review and approve the outcome of an energy efficiency assessment.

This PAS defines the competence of a lead energy assessor through a combination of the following: professional conduct (**4.2**), core competencies (**4.3**), technical and non-technical knowledge and skills (**4.4**) and the management (including the knowledge and skills) of an assessment team (**4.5**).

The lead energy assessor might be appointed from a source external to the organization, or might be appointed from within the organization itself.

Planning is an important part of an energy efficiency assessment, and one that is integral to the role of a lead energy assessor. This could involve specifying and agreeing the scope, evaluation criteria and timeframes with the organization for which the energy efficiency assessment is being undertaken.

In addition, a lead energy assessor's responsibilities typically include:

a) assessing the scope of the energy efficiency assessment to:
   1) define the knowledge and skills needed;
   2) identify the need for additional assessment resource;
   3) discuss and agree with the organization the requirements for an assessment team;
   4) check that an assessment team is competent to carry out the relevant elements of the energy efficiency assessment assigned to them;
   5) develop and manage the programme of work;
   6) review and approve the outcome of energy efficiency assessment findings by the assessment team;

b) discussing and agreeing with the organization a chosen method for the energy efficiency assessment;

c) leading the activities and processes of an energy efficiency assessment;

d) signing off the energy efficiency assessment report, in order to confirm that the energy efficiency assessment:
   1) has been carried out in an independent manner by competent personnel;

2) has been carried out using the method agreed (for example, this might be BS EN 16247-1, ISO 50002[3] or another methodology such as one developed within an organization);
3) covers the planned scope of the energy efficiency assessment;
4) is based on appropriately detailed calculations of the opportunities for improvement;
5) includes an energy efficiency assessment report that provides clear and concise information on the opportunities for improvement; and
6) meets any other criteria agreed with the organization;

e) being accountable for the findings, recommendations and content of the energy efficiency assessment report.

0.5 "Assessment" versus "audit"[4]

The differences between an audit and an assessment are subtle. It is a subject that causes much discussion within the energy efficiency industry, and is one on which most people will have a strong opinion.

Fundamentally, an assessment deals primarily with examining adherence to a set of concepts and principles, and evaluating the outcome through both quantitative and qualitative data. The focus tends to be on the output, rather than the route taken to get there.

On the other hand, the focus of an audit is primarily on procedures and processes that are to be followed, and is conducted through checking the adherence of people, equipment and activities to these procedures and processes. It is generally conducted through a series of controlled checks and balances. The dissection, analysis and evaluation of results is, in most cases, the secondary focus of an audit.

PAS 51215 deals with the competence of a lead energy assessor conducting energy efficiency assessments by approaching it through the method of an assessment; while the concepts and principles of lead energy assessor competences are prescribed in this specification, the processes and procedures themselves are not. That said, it is clear that a competent lead energy assessor needs to have a sufficient understanding of the processes and procedures for effective energy audits, particularly when overseeing an assessment team. It is for this reason that the informative annexes contain examples of ways in which the competences might be demonstrated.

[3] In preparation.

[4] Further discussion on the differences between assessment and audit can be found on the European Foundation for Quality Management website: http://www.efqm.org/blog/whats-the-difference-between-assessment-and-audit. [Available at the time of publication.]

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1 Scope

This PAS specifies requirements for the competencies necessary for a person to be deemed capable of conducting an energy efficiency assessment, leading an assessment team, and/or reviewing and approving the outcome of an organization-wide energy efficiency assessment, or series of energy efficiency assessments.

It is applicable to a lead energy assessor who might be working alone or leading an assessment team to complete an energy efficiency assessment. The energy efficiency assessments covered include those to be carried out on a building or group of buildings, industrial operations or installations and transport, which form a key part of an organization's energy consumption.

Annex A gives examples of ways in which core competencies might be demonstrated, Annex B gives considerations for determining the necessary knowledge and skills of an assessment team and Annex C gives examples of energy use. All annexes are for information and guidance and do not form part of the requirements for the PAS.

This PAS does not cover the processes involved in carrying out an energy efficiency assessment or for identifying the scope of an individual energy efficiency assessment.