

ASTCEA04

Identify effective measures to reduce energy consumption and achieve carbon reduction



Overview

This standard is about the identification of ways in which energy efficiency can be improved. It covers the assessment of current energy efficiency and the review of alternative ways of optimising energy efficiency and achieving carbon reduction. It covers the review of buildings, activities, products, systems and people which could improve energy efficiency and reduce carbon emissions. It covers both single buildings and a site where there are several buildings which interact with each other in terms of energy efficiency.

This standard is for professionals in energy management and advice.

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Performance criteria

You must be able to:

- P1 determine the needs, tenure, access to capital and motivations of the client regarding energy consumption and carbon reduction
- P2 identify areas of significant energy consumption and any trends in energy consumption or changes in the pattern of energy consumption over time
- P3 compare data with operational performance and establish differences
- P4 identify and explore possible reasons for any differences
- P5 establish expected future energy consumption and its implications based on meter readings, hours run, name plate data, compiled utility bills and planned operational changes
- P6 identify and prioritise ways of optimising the energy efficiency of both the building fabric and services
- P7 identify changes that could be made to existing procedures and behaviours that would improve the energy efficiency of the building, reduce carbon emissions and meet legal, safety and operational requirements
- P8 review current activities, products, systems, processes and behaviours that effect energy efficiency and carbon emissions
- P9 review alternative activities, products, systems, processes and behaviours that would enhance energy efficiency and achieve carbon reduction
- P10 evaluate the feasibility, practicality and relevance of alternatives in relation to the fabric of the building and the building services
- P11 establish the views of staff on the current activities, products, systems, processes and behaviours and how they could be improved
- P12 identify changes in current activities, products, systems, processes and behaviours to improve energy efficiency and reduce carbon emissions
- P13 identify ways of optimising the efficiency of current plant and equipment in relation to heating, lighting and air conditioning
- P14 establish ways of improving the monitoring and measurement of

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- operational energy usage including metering and sub-metering
- P15 identify financial incentives and schemes to support energy efficiency and carbon reduction relevant to the measures being considered
- P16 identify the legal requirements which impact on energy use and carbon emissions and their impact on the measures being considered
- P17 maintain impartiality when identifying effective measures to reduce operational energy consumption and achieve carbon reduction

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Knowledge and understanding

You need to know and understand:

- K1 how to determine the needs, circumstances and motivations of clients regarding energy consumption and carbon reduction
- K2 how to explore financial constraints that might affect the client's ability to act
- K3 the principles of building structure, elements, fabric, services and overall design philosophy
- K4 the activities, products, systems and processes of the organisation and their impact on energy and carbon consumption
- K5 the key metrics by which energy consumption is measured and recorded
- K6 how to track energy consumption over time and how to identify significant trends in usage
- K7 the types of appropriate further investigations where data inconsistencies are discovered
- K8 the alternative methods for optimising the use of existing plant, equipment and consumables
- K9 the alternative activities, products, systems and processes that would enhance energy efficiency and achieve carbon reduction in relation to energy purchase and supply, heating, lighting, air conditioning, small power, refrigeration, building fabric, passive strategies, processes and ventilation
- K10 how to evaluate alternatives against the constraints of the building and finances available
- K11 how to balance clients' needs with the requirements of own organisation
- K12 the requirements and procedures involved in energy efficiency schemes
- K13 sources of financial support for energy and carbon reduction
- K14 sources of information and agencies providing advice and support to organisations for energy and carbon reduction
- K15 the legal and regulatory framework relating to energy efficiency and carbon reduction including national and international requirements

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