

Energy Efficiency Obligation Scheme

Guidelines for claiming energy savings from lighting upgrade projects

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Sustainable Energy Authority of Ireland

SEAI is Ireland’s national energy authority investing in, and delivering, appropriate, effective and sustainable solutions to help Ireland’s transition to a clean energy future. We work with the public, businesses, communities and the Government to achieve this, through expertise, funding, educational programmes, policy advice, research and the development of new technologies.

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1. Introduction

There are numerous SEAI programmes which offer support to businesses and the public sector for lighting upgrade projects. A lighting upgrade project is one in which the existing lighting system in a premises is altered in order to reduce electricity usage. As with other project types, applications that claim energy savings resulting from such projects can be made through the Energy Efficiency Obligation Scheme's (EEOS) Project Evaluation Platform (PEP).

Obligated parties (OPs) may engage directly with clients or use third party administrators to assist companies in undertaking lighting upgrade projects. Non-Residential Energy Credit (NREC) applications can be completed to claim energy credits associated with these projects once the appropriate Measurement and Verification (M&V) of energy savings has been completed.

To claim energy credits from lighting upgrade projects, the following documentation is required:

- An M&V plan detailing the proposed project and methodology selection
- An M&V report detailing the completion of the M&V process as selected in the M&V plan
- SEAI lighting Calculation Tool complete with all relevant project details and subsequent savings (Only applicable where scaled savings has been selected as M&V methodology)
- Proof that OP was material to completion of the project. (i.e. Client declaration stating contribution and involvement of OP)
- Proof of completion of project to industry standards (i.e. site photos, invoices, audit reports, etc)

This document outlines the requirements, suggested methodologies, and relevant M&V approaches to undertaking a lighting project with the intent of submitting the relevant energy savings for evaluation under the SEAI's EEOS.

2. Requirements for Lighting Upgrade Projects

Obligated parties who wish to claim energy savings made as part of a lighting upgrade project must first clearly identify and document a suitable means to authenticate all energy savings achieved as part of the project.

Additionally, the obligated party must clearly demonstrate the process by which the Energy efficiency improvements were identified, what options were explored and the process by which a methodology was selected.

This should be done by means of an M&V plan.

The M&V plan should detail the following:

- What do we want to do? Why do we want to do it? (What is the OP's role) How are we going to do it?
- How will we measure and verify the savings (and what are they measured against)?
- How will we ensure that the savings (energy and financial) will continue to be delivered over the lifetime of the action?

The M&V plan should also show consideration for **additionality and materiality** in the planning phase by detailing the following:

- How can we provide a demonstrably material contribution and how can the energy efficiency action identified meet the additionality requirement?

It is also recommended that preliminary calculations are conducted in the planning phase, to ensure realistic expectation on the part of the client, and so that the OP can assess the potential energy savings achievable from the project.

3. Determining energy savings from lighting upgrade projects

There are two appropriate methods for measuring and verifying energy savings as part of a Lighting upgrade project:

- a) **metered savings**, whereby the savings resulting from an energy efficiency measure are measured and verified by metering energy use and comparing it against a predetermined baseline.
- b) **scaled savings**, whereby the savings resulting from an energy efficiency measure are measured and verified using engineering calculations and supporting documentation.

Metered savings for a lighting upgrade project require that OPs gather sufficient electricity usage data for a period prior to the implementation of energy efficiency measures. From this data a baseline can be established. Data must then be gathered on usage after the implantation of the energy efficiency measures. For lighting upgrade projects, 12 months of data is required for both baseline data and results data. This is in order to ensure accurate comparison when considering influencing factors such as production and natural light.

Scaled savings for a Lighting upgrade project require that OPs complete engineering calculations in order to determine the energy savings achieved from of the project. This is done by calculating the energy usage of the original lighting system, and of the lighting system after all upgrades have been completed.

Scaled savings may only be used where establishing robust measured data for a specific installation is difficult or disproportionately expensive. Due to the nature of lighting upgrade projects scaled savings are generally the more appropriate M&V methodology. Therefore, the SEAI have developed a calculation tool to assist OPs in the M&V process, and to standardise all calculations received as part of Lighting upgrade projects (See "*Lighting Calculation Tool*" section below). This standardised process eliminates the need for a traditional M&V report to be submitted as part of an NREC application.

The OP must justify their M&V methodology selection in their NREC application and include a submission of the SEAI's Lighting Calculation tool, relevant proof of materiality and additionality, and evidence that the works have been completed to the required industry standard.

4. Lighting Calculation Tool

The SEAI have developed a tool to assist OPs in the process of determining scaled savings from Lighting upgrade projects. The purpose of this is to standardise all calculations received as part of Lighting upgrade projects. This tool incorporates the latest Triple E registered projects, as well as data on lighting usage in buildings, to maximise the accuracy of scaled savings.

This tool is recommended for use in all Lighting projects where scaled savings have been determined as the appropriate M&V methodology. Detailed guidance has also been developed on how to correctly input data into the tool. It is essential that this is carefully reviewed by all OPs until they have become accustomed to the tool.

The EXCEL Lighting Calculation Tool is available on the SEAI website and is linked below, along with guidance on how to correctly use it.

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