

Business Energy Upgrades Scheme

Contractor Info Form – Design Assistance

Introduction

This form has been compiled to assist you as the Nominated Company/Contractor to ensure you are aware, have the ability and agree to comply with the minimum requirements of the Business Energy Upgrades Scheme for the above measure.

Minimum requirements

The minimum requirements of the scheme are also outlined. Ensure you are satisfied you and your associated installer can commit to all requirements prior to accepting your nomination. Failure to achieve any of these requirements will cause a cancellation of your clients grant offer.

Consultant requirements

Min. Qualifications

Chartered Engineer in associated discipline (Building Services, Mechanical, Electrical)

Proficient in eligible software

Technical requirements (Simulation)

Simulation Methodology (Renewable Heat Load Estimates)

For buildings with a floor area greater than 150 m² the building's heat loads should be calculated using either via eligible software. Buildings under 150m² can you manual (e.g excel) method following the same methodology:

- CIBSE Heating and Cooling Steady-State Method.
- ASHRAE Heat Balance Method

Key Components of the Heat Balance Method:

1. **Internal Loads:** Accounts for heat generated by occupants, lighting, and equipment inside the building.
2. **External Loads:** Considers the impact of outdoor conditions, such as solar radiation, outdoor air temperature, and wind on the building envelope.
3. **Conduction through the Building Envelope:** Calculates heat flow through walls, windows, roofs, and floors due to temperature differences between indoor and outdoor environments.
4. **Air Exchange:** Includes the effects of infiltration and ventilation, where outdoor air enters and affects indoor temperature and humidity.

5. **Radiative Heat Transfer:** Addresses how radiation from sunlight or internal sources affects surfaces inside the building and the overall thermal balance.

The ASHRAE Heat Balance Method is an acceptable method according to CIBSE Guide A.

CIBSE Heating and Cooling Steady-State Method

The CIBSE (Chartered Institution of Building Services Engineers) Heating and Cooling Steady-State Method is a simplified approach for calculating heating and cooling loads in buildings. Unlike dynamic methods, this approach assumes that conditions remain constant over time, allowing for straightforward calculations based on average design conditions.

Key Components of the CIBSE Steady-State Method:

1. **Internal Gains:** Considers heat from occupants, lighting, and equipment, but assumes that these loads remain steady.
2. **External Gains:** Includes the impact of solar radiation, outdoor temperature, and wind, using fixed values for these external factors.
3. **Building Envelope Heat Transfer:** Calculates heat transfer through walls, windows, roofs, and floors under steady-state assumptions, often using U-values (thermal transmittance) to estimate heat loss or gain.
4. **Air Infiltration and Ventilation:** Accounts for air exchange with the outdoors, based on standard rates of infiltration and ventilation, but assumes these remain constant.

Simulation Methodology (Impact Assessment of all report options)

It is essential for building owners or occupants considering a refurbishment to make informed decisions about the work they plan to undertake. Therefore, a Building Energy Rating (BER) assessment must be used to review the cumulative impact of all measures outlined with the Design Assistance Report Template evaluations for potential improvements to reach an A3 BER rating.

While achieving an A3 rating is not a requirement of the Business Energy Upgrade Scheme, this assessment offers valuable insights and establishes a pathway for future energy conservation measures (ECMs).

Simulation Methodology (Eligible Software)

The Sustainable Energy Authority of Ireland (SEAI) has approved several software tools for use under the Non-Domestic Energy Assessment Procedure (NEAP) in Ireland. These tools can be utilized for the simulations requirements of this design package to calculate loads and impact of measures on the building in question. The approved software packages are outlined below:

1. **iSBEMie:** Developed specifically for Ireland, this software is based on the UK's SBEM model and is regularly updated to reflect Irish regulations and primary energy factors.
2. **DesignBuilder SBEM:** This tool provides a graphical interface for SBEM, making it user-friendly for modelling building energy performance. NEAP-approved versions include DesignBuilder SBEM v6.1.1, v6.1.8, and v7.0.0.

3. IES Virtual Environment: Versions such as Virtual Environment v7.0.11 through v7.0.17 are approved for compliance and offer dynamic simulation modelling capabilities for more accurate predictions of building energy use.
 4. G-ISBEM: This software supports the SBEM methodology, enabling detailed building information input for compliance checks and energy rating calculations. The approved version is G-ISBEM v23.0
-

Technical requirements (Scheme Design)

Calculations

All calculations required to complete the scheme design package (aside from simulations) for the specific selected measures as part of the application shall be provided in soft editable and pdf format.

These shall include all plant and distribution sizes including but not limited to:

- Heat Generator Capacity
 - Pipe Sizes
 - Duct Sizes
 - Controls Points list
 - Panel Sizes
 - Field Equipment (e.g. emitters, lighting etc.) Quantity & Capacity
-

Equipment Schedule

All proposed equipment shall be scheduled within a standard equipment schedule to complete the scheme design package for the specific selected measures as part of the application. This shall be provided in soft editable and pdf format. It shall include the appropriate parameters in each case to allow a request for costs from suppliers for same.

- These schedules shall include but not be limited to:
 - Capacity
 - Material
 - Dimensions (incl. maintenance area)
 - Quantity
 - Noise Level
 - Quantity
 - Min Standards
-

Drawings

Stage 3 scheme design level drawings (incl. schematic and layouts) shall be provided to include at a minimum:

- Plant Areas
- Floor Plans
- System Schematic (Renewable Heat System)

These layouts shall be produced in Autocad or similar industry standard software. This shall be provided in soft editable and pdf format. Drawings shall include as a minimum dimensions of:

- Plant
- Pipework routes
- Ductwork routes
- Maintenance access
- Plant Skids
- Significant Builders Work

Controls

Details on proposed controls intervention shall include:

- Text narrative to outline the proposed control strategy of new systems. It shall also include and potential integration of existing system where benefit is identified.
 - Industry Standard points list to identify approximate number of points (digital and analogue I/O). This should be delineated across the different suggested MCC and outstations.
 - Identification of number of proposed MCC and outstations (location indicated on drawings).
-

Payment documentation

All completion documentation must be uploaded by your client for review and sign off prior to release of grant payment.

Failure by you to provide a full and compliant set of all documentation to them in a timely could cause a cancellation of their grant offer.

Documentation

Design Assistance Report (SEAI Design Assistance Report Template)

Drawings (Autocad of equal and approved) -RIAI Stage 3

Calculations

Simulation File

Company & installer registration

We do not require an applicant to select a company from a register. This allows applicants to use their preferred company to complete the works and allows more of the supply chain to participate in the scheme.

However, in order to monitor quality within the supply chain for the scheme we do require that all companies and their associated installers carry out a registration process the first time they are nominated under the scheme. This is a simple process and you do not have to be registered to commence the works but rather before your client makes an application for payment.

Please note as part of the registration you can decide whether you wish to be on the published register of companies and installers or not. If you opt out of this list, you will remain in the application portal in case you want certain clients to select you on future applications. If you decide to remain visible on the register you will be exposed to a strong line of prospects through the scheme.

It is important that prior to commencing the works you and your associated installer download the registration forms for your respective roles and satisfy yourselves you can comply with all Terms and Conditions outlined therein.

Please follow the link below to complete the simple Business Energy Upgrades registration process, if this is your first involvement with the scheme. You can register for a number of measures through in a single application once you possess all the relevant requirements:

<https://www.seai.ie/register-with-seai/>