

ECO3 Innovation: Approved innovation measures

Overview

Under ECO3, once Ofgem has approved an application for an innovation measure, we are required to publish a description of the innovation measure and the date on which it was approved. This is to allow other obligated suppliers delivering measures which meet this description to notify them as an innovation measure; and to allow suppliers and the supply chain to understand what innovation measures have already been approved under the scheme.

A description of each innovation measure, including key characteristics, date of approval, additional requirements, and product(s) meeting the description, is provided in the table below.

It is the responsibility of each supplier to understand the provisions of the Electricity and Gas (Energy Company Obligation) Order 2018 (the ECO3 Order) and how those provisions apply to them. This document is not intended to be a definitive guide to these provisions.

ECO measures must be installed in accordance with the relevant Building Regulations and PAS 2030:2019 and 2035:2019. Additionally, innovation measures must be installed in accordance with any Agrément certificate listed under "Product(s) meeting description" in the tables below. Where additional information is submitted in relation to an innovation application that pertains to the suitability of a measure for a given property (eg fire safety testing), this may be set out below. Restrictions in the use of the measure based upon information provided to Ofgem at the point of application may also be stated. However, suppliers and/or installers who intend to deliver an innovation measure are ultimately responsible for said installation and must satisfy themselves as to suitability of the measure for a given property prior to installation. Ofgem cannot guarantee any claims made in respect of the innovation measures listed below.

Approved Innovation Measures

Innovation measure type	Date of approval	Number for notification	Product(s) meeting description
External Wall Insulation (EWI)	20/02/2019	001	Mauer (KIWA BDA Certificate Number BAW-18-024-S-A-UK)

Key characteristics

The system involves the installation of a new façade, creating a cavity between its inner surface and the existing walls which is then insulated with non-combustible blown fibre wall insulation.

The product is constructed off-site as a kit of parts. The system is designed and manufactured based on a mm accurate 3D model generated from a laser scan of the property to which it is being installed.

Technical monitoring / Additional requirements

Both EWI and CWI technical monitoring questions should be used.

The additional score monitoring question “Is the product installed the Mauer EWI system (KIWA BDA Certificate Number BAW-18-024-S-A-UK)?” should be applied.

Innovation measure type	Date of approval	Number for notification	Product(s) meeting description
Under Floor Insulation (UFI)	22/05/2019	002	Q-Bot (BBA certificate 17/5440, product sheet 1)

Key characteristics

The innovation uses robotics and AI to install underfloor insulation. A robot is inserted into the underfloor void through a small opening in the property. The robot then builds a detailed 3D map of the void space and services. A polyurethane foam is spray applied to the underside of the floor voids, expanding to fill gaps. The robot continuously monitors the thickness of the insulation applied to create a record of each install and to verify installation has been completed correctly.

The installation method reduces disruption for residents and means installation is typically much quicker than traditional methods of under floor insulation.

Technical monitoring / Additional requirements

No additional technical monitoring questions – existing UFI questions should be used.

The additional score monitoring question “Has Q-Bot remote installation been used to install the insulation (BBA certificate 17/5440, product sheet 1)?” should be applied.

Innovation measure type	Date of approval	Number for notification	Product(s) meeting description
Smart Thermostat	05/06/2019	003	Switchee Smart Thermostats (Gen2 Smart Learning Thermostat and Switchee Econa)

Key characteristics

The innovation uses GSM connectivity rather than Wi-Fi (which is not universally available), allowing the product to be installed in all households.

The product contains 5 sensors for temperature, motion, light, air pressure and humidity.

The product is a 'fit and forget' product from a resident's perspective. The data collected by the product is compiled with other relevant data to automate and optimise heating settings in a home. The data is also used to provide alerts and KPIs for landlords to support management of the heating needs of their housing stock.

The product includes messaging features allowing landlords to send energy saving tips and advice to residents, schedule appointments, and conduct remote boiler testing.

Technical monitoring / Additional requirements

No additional technical monitoring questions – existing Smart Thermostat questions should be used.

The additional score monitoring question "Is the product installed the 'Switchee Smart Thermostat'?" should be applied.

Innovation measure type	Date of approval	Number for notification	Product(s) meeting description
External Wall Insulation (EWI)	01/11/2019	004	Instaclad (BBA certificate 15/5201, product sheet 1)

Key characteristics

The system involves the installation of modular, tongue and groove, pre-primed insulation boards that are mechanically fixed to the property using a rail system. The boards are interlocked and finished with one coat of render that is shower proof in 30 minutes, and can be applied in a range of temperatures from -10°C to + 30°C. The system reduces installation time, and downtime due to inclement weather.

Aerogel is used in window detailing for improved thermal performance.

Technical monitoring / Additional requirements

No additional technical monitoring questions – existing EWI questions should be used.

The additional score monitoring question “Is the product installed the Instaclad EWI system (BBA certificate 15/5201, product sheet 1)?” should be applied.

Innovation measure type	Date of approval	Number for notification	Product(s) meeting description
Internal Wall Insulation (IWI)	28/11/2019	005	Energystore Superbead (KIWA BDA cert BAW-19-106-S-A-UK)

Key characteristics

The system involves the injection of EPS beads with an adhesive into the cavity between the lath and plaster internal lining and the inner face of the exterior wall of traditionally-constructed properties (or where a property has been refurbished, between the internal plasterboard and the inner face of the exterior wall). A cavity width of at least 50mm is required. Injection holes are drilled in a pre-determined pattern, and the EPS beads are coated with the adhesive in the injection gun.

The system reduces the cost and time taken for installation of IWI. Disruption to the householder is also reduced, and there is no impact on the room size.

Technical monitoring / Additional requirements

This product must be installed by an installer with CWI and IWI PAS accreditation.

The average cavity depth should be used to determine the insulation thickness for EPS 200 in Table 20 of the ECO3 Guidance: Delivery. This will give the U-value change for the deemed score. The cavity depth should be measured at several points along each wall to obtain an average.

CWI questions 2 to 8 in the technical monitoring question set should be used, along with IWI questions 1, 2, 4-6, 9 and 10

The following additional score monitoring questions should also be applied:

- Is the product installed Energystore Superbead injected EPS (KIWA BDA cert BAW-19-106-S-A-UK)?
- Has the cavity depth been measured at several points along each wall to obtain an average insulation thickness?
- Has the average cavity depth been used to determine the insulation thickness for EPS 200 in Table 21 of the ECO3 Guidance: Delivery?

Innovation measure type	Date of approval	Number for notification	Product(s) meeting description
Party Cavity Wall Insulation (PWI)	05/02/2020	006	Climabead Party Wall (KIWA BDA cert BAW-18-043-S-A-UK)

Key characteristics

The system involves the injection of EPS beads with an adhesive into party cavity walls. Injection holes are drilled in a pre-determined pattern in the exterior wall of the property, with no internal drilling required in the loft space. The EPS beads are coated with the adhesive in the injection gun. The drilling technique uses a lance system, with a 360 multidirectional nozzle resulting in a reduced drilling pattern, allowing deployment in a greater range of properties for which the entry points for standard drilling techniques are obstructed by an object on the exterior wall.

There is less disruption to the householder as no internal drilling is required. The speed of installation is reduced by over 50% compared to standard PCWI, and the EPS beads provide greater thermal efficiency over mineral wool.

Technical monitoring / Additional requirements

This measure is only an innovation measure in properties where the cavity extends to the full height of the gable wall. In other properties it is considered a standard party PWI measure

Existing CWI and PWI technical monitoring questions should be used.

The following additional score monitoring questions should also be applied:

- Is the product installed Climabead party cavity wall insulation (KIWA BDA cert BAW-18-043-S-A-UK)?
- Has the loft space in all party cavity walls been filled?

Innovation measure type	Date of approval	Number for notification	Product(s) meeting description
External Wall Insulation (EWI)	19/02/2020	007	Soltherm 75 (BBA Certificate 18/5557, Product Sheet 4)

Key characteristics

The EWI system is comprised of mineral wool insulation slabs which are mechanically fixed to the substrate wall with supplementary adhesive. The mechanical fixing goes through two crossed fibreglass mesh strips which are embedded in the base coat adhesive. The Soltherm cross knot is combined with the clamping ring, and stainless steel centre pin fixings. The fibreglass mesh is also used at corners and insulation ends to reinforce insulation fixing. This fixing method enables an increased resistance to wind loads, and reduces delamination.

The system was subjected to extensive testing to demonstrate a lifetime of 75 years.

Technical monitoring / Additional requirements

This measure is only an innovation measure in properties for which EPS EWI is unsuitable.

The standard 25 year appropriate guarantee will be sufficient for ECO3 eligibility, however a 75 year manufacturer's warranty must also be provided to the householder to be eligible as an innovation measure.

No additional technical monitoring questions - existing EWI questions should be used.

The following additional score monitoring questions should also be applied:

- Is the product installed Soltherm 75 (BBA Certificate 16/5319, product sheet 2)?
- Is EPS EWI unsuitable for this property? Yes = Pass, No = Fail.

Innovation measure type	Date of approval	Number for notification	Product(s) meeting description
Smart Thermostat	24/03/2020	008	Nest Thermostats with Seasonal Savings algorithm (Nest Learning Thermostat and Thermostat E)

Key characteristics

The product is a smart thermostat with an algorithm that automatically reduces the temperature based on the customer’s own requirements, with the aim of setting a more efficient heating schedule. A series of very small adjustments to the scheduled target temperatures are made when the occupant is least likely to notice any drop in temperature. The algorithm runs for a three week period at the start of the heating season, and aims to maintain the more energy efficient heating schedule going forward. Customers are offered the program on their thermostat or phone app and must opt-in to participate. The algorithm learns from any temperature corrections made by the occupant and adjusts the incremental reductions accordingly. Following the implementation of the algorithm, the user retains full ability to overwrite or edit their schedule and set heating points through their thermostat or phone app.

To minimise any risk to households vulnerable to the effects of cold, the algorithm will automatically not be deployed to customers / thermostats where the demand temperature set by the customer is 18°C or below. The algorithm will also never change the heat setting by more than 1°C.

Technical monitoring / Additional requirements

No additional technical monitoring questions – existing Heating Controls questions should be used.

The additional score monitoring question “Is the product the Nest Learning Thermostat or Thermostat E?” should be applied.

Innovation measure type	Date of approval	Number for notification	Product(s) meeting description
Cavity Wall Insulation (CWI)	01/07/2020	009	ARP CWI (BBA certificate 89/2294, product sheet 2. KIWA BDA Certificate Number BAW-17-071-S-A-UK)

Key characteristics

The system involves the injection of mineral wool insulation into cavity walls in properties over 5 storeys using a rope access installation technique. The insulation is comprised of granulated glass mineral wool fibres, treated with an inert water repellent during manufacture. The rope access installation technique is an alternative to the use of scaffolding, and involves the use of ropes and associated equipment to gain access to and from the required work position on the external wall of the building, and be supported there. The rope access technicians are members of IRATA, and box testing is used to ensure the pressure is correct for adequate fill of each storey. The installation technique has been adapted to enable mineral wool CWI to be installed.

The rope access technique reduces the installation time and costs associated with installing CWI in high rise properties, as scaffolding is not required. The use of mineral wool insulation meets the fire safety regulations for buildings over 18m high, in line with Building Regulations 2010, Fire Safety Approved Document B, 2019 edition.

Technical monitoring / Additional requirements

No additional technical monitoring questions - existing CWI questions should be used.

The additional score monitoring question "Has mineral wool CWI been installed using rope access?" should be applied.

Innovation measure type	Date of approval	Number for notification	Product(s) meeting description
Room in Roof Insulation (RIRI)	01/07/2020	010	MI Systems Design RIRI (BDA Agrément BAR-19-116-S-A-UK)

Key characteristics

This is a certified room in roof thermal insulation layer envelope and plasterboard lining system, which comprises of a range of flexible and rigid thermal insulation products of various specifications, together with associated fixings, sealant and accessories. The system is for use as a complete thermal insulation envelope of existing room in roof spaces with consideration to the existing buildings ventilation and condensation performance through a pre-design survey. The thermal roof elements include masonry gable ends, party walls, common walls, dwarf walls, sloping ceilings, flat ceilings above the roof space, dormer window surrounds and residual loft spaces. A water-repellent brick protection treatment is also applied to the outside of masonry gable or common walls. The components used along with a systemised approach provide improved airtightness and thermal performance compared to standard room in roof insulation.

Technical monitoring / Additional requirements

In addition to the standard technical monitoring question set for RIRI (including IWI.1 – IWI.11 and LI.1 – LI.8), the following technical monitoring questions should be used:

Mid install

- Has the MI SEAL (blue in colour) been applied?

Post install

- Have the studwork heads been insulated using MI BRIDGE?
- Has a MI RIRI completion certificate been stapled to the loft roof stating the pre-approval number of the installation?
- Has Stormdry been applied to the external gable wall of the room-in-roof?

The additional score monitoring question “Is the product installed MI Systems Design RIRI (BDA Agrément BAR-19-116-S-A-UK)?” should be applied.

Innovation measure type	Date of approval	Number for notification	Product(s) meeting description
External Wall Insulation (EWI)	29/07/2020	011	Wetherby EWI ("60 years" durability system in BBA certificate 03/4058, product sheet 2 & 3; 09/4625 product sheet 2)

Key characteristics

The system involves an EWI product for which 50% of installations will be subject to independent technical monitoring using the ECO technical monitoring question set, along with the implementation of a planned inspection and maintenance programme.

The EWI is adhesively and mechanically fixed through reinforcement mesh using high performance anchors, with mesh patches applied over the fixing heads and fully embedded. Stainless steel grade components are used for mechanical fixings, starter track, render stop ends and corner beads. Stainless steel base and corner profiles are also used.

The inspection and maintenance programme is conducted by a suitably qualified third party. The first inspection is conducted within the first 12 months following installation. Subsequent inspections are conducted every five years from the date of the last inspection for a 25 year period. Any maintenance or repairs identified during these inspections will be rectified at no cost to the homeowner, with the exception of wilful / accidental damage and / or vandalism. These features increase the durability of the product, and quality of installations.

Technical monitoring / Additional requirements

In addition to the standard technical monitoring question set for EWI, the following technical monitoring questions should be used:

Mid install

- Are the fixings used, as specified in the BBA certificate for the 60 year lifetime produce (Stainless steel anchors) and placed through the mesh layer of the system?
- Has the board fixing sequence as outlined in the BBA certificate for the 60 year lifetime product been followed?
- Is there at least one carded operative on site for every four operatives that is trained in the specific 60 year lifetime application method?

The additional score monitoring question "Is the product installed Wetherby EWI ("60 years" durability system in BBA certificate 03/4058, product sheet 2 & 3; 09/4625 product sheet 2)?" should be applied.

Innovation measure type	Date of approval	Number for notification	Product(s) meeting description
Boiler	20/11/2020	012	Viessmann Vitocalor PT2

Key characteristics

The product is a domestic sized micro Combined Heat and Power (mCHP) unit that contains a low temperature fuel cell, which extracts hydrogen from natural gas to generate electricity at a lower cost. The waste heat can be used for central heating, or stored in the DHW cylinder contained within the unit. The gas condensing module primarily serves to provide heat during times of peak demand.

The mCHP unit also includes a weather-compensated control unit which can be controlled from the device, or connected to the internet and controlled via a smartphone.

Installations under ECO include a free 10 year service package, which will increase the durability of the product.

These features increase the durability of the product, and quality of installations.

Technical monitoring / Additional requirements

In addition to the standard technical and score monitoring question set for boiler measures, the following score monitoring questions should be used:

- Is the product installed the Viessmann Vitocalor PT2?
- Have details of the free 10 year service package been provided to the householder?

Innovation measure type	Date of approval	Number for notification	Product(s) meeting description
Solar PV	11/02/2021	013	UKSOL Optimised PV, model numbers: UKS - 6M30-OP / 6MB30-OP; UKS - 6M-OP / 6MB-OP.

Key characteristics

The system consists of MCS certified monocrystalline PV modules, with optimiser units built in during the manufacturing process to ensure quality and consistency. The optimised panel offers an increase in electricity production, by allowing generation to continue if part of the string or array is shaded, or develops a fault. Systems can be installed using multiple roof angles and orientations. The addition of the optimiser allows PV installations in properties that may previously have been unsuitable due to shading.

The optimiser results in a reduction of any fire risk from the panels, which will be disconnected if the optimiser identifies a fire, or risk of a fire occurring due to a fault. The system will function without the need for any connection to the internet, however, optional connectivity is available so the occupant or landlord can monitor the system remotely, and receive automatic notifications of any faults that occur. The system has a 25 year manufacturer's warranty.

Technical monitoring / Additional requirements

In addition to the standard technical and score monitoring question set for Solar PV, the following technical and score monitoring questions should be used:

Post install Technical Monitoring

- Is the measure installed as specified in the appropriate product certificate and/or system designer's instructions?

Score Monitoring

- Are the panels installed UKSOL Monocrystalline with Tigo optimisers, as visible from the sticker on the inverter?

Innovation measure type	Date of approval	Number for notification	Product(s) meeting description
Room in Roof Insulation (RIRI)	11/02/2021	014	Smart Fix Systems RIR (Aerogel)

Key characteristics

The product is a Room in Roof Insulation (RIRI) system comprised of Aerogel insulants to reduce the thickness of the insulation boards, and pre-fabricated insulated services panel to reduce cold bridging around services.

Aerogel insulation is used for the entirety of the RIRI installation, including the pre-fabricated services panel. The low thermal conductivity of Aerogel significantly reduces the thickness required to achieve the appropriate U-value, and increases the range of properties by enabling installation where space is limited.

The pre-fabricated services panel is an 'insert panel' insulated with Aerogel. It is manufactured off-site for socket boxes and switches, with cables running through a protected conduit. The services panel reduces any thermal bridging behind lighting, power, data & TV sockets, and improves the quality of the installation.

Each installation will be also supported by an individual assessment using WUFI® software, which dynamically predicts moisture movement and storage as well as condensation for each location.

Technical monitoring / Additional requirements

In addition to the standard technical monitoring question set for RIRI (including IWI.1 – IWI.11 and LI.1 – LI.8), the following technical monitoring questions should be used:

Mid install technical Monitoring

- Are boards butted together with no gaps at abutments?

Score Monitoring

- Has the RIR been insulated with Aerogel and the Smart Fix services panels?

Innovation measure type	Date of approval	Number for notification	Product(s) meeting description
External Wall Insulation (EWI)	22/02/2021	015	Soltherm FSC (Soltherm P EWI system using FSC panels (BBA certificate 18/5557, product sheet 3)

Key characteristics

The product is an EWI system with adhesively fixed 'Fire Safe Composite' (FSC) panels with supplementary mechanical fixings, both with a reinforced basecoat and render finishes. The system is designed so that the external layers (basecoat, reinforcing mesh, and render) are permanently connected to the substrate through the mesh and adhesive.

The FSC panels are made up of grey EPS boards adhered together with cementitious adhesive and reinforced with an alkali-resistant glass fibre mesh. The FSC panels are marketed at reducing fire spread across the EWI in comparison to standard EPS, PIR and PUR panels, by compartmentalising any fire which does occur. This is intended to lead to improved quality and fire safety in comparison to standard EPS EWI systems.

Please note the system is not certified for use in high rise buildings, and a suitably qualified operative should satisfy themselves of the suitability of the product in regards to fire safety for low rise buildings.

Technical monitoring / Additional requirements

In addition to the standard technical and score monitoring question set for EWI the following score monitoring question should be used:

- Is the product installed Soltherm P EWI system using FSC panels, as described in BBA certificate 18/5557, product sheet 3?

Innovation measure type	Date of approval	Number for notification	Product(s) meeting description
Smart Thermostat	24/01/2022	016	Secure Meters C1727 Smart Thermostat

Key characteristics

The product is a smart thermostat with a programmable thermostatic display interface and an app, which can be used via two connectivity modes, WI-FI and Bluetooth Low Energy (BLE). The system detects the communication modes available and automatically connects to the most suitable, without requiring any manual input from the user, thereby enabling the householder to continue to set and change heating schedules and operate heating controls if one connectivity mode drops.

The programmable interface has an unreplaceable battery with a twelve-year manufacturer’s warranty, therefore in a similar manner to wired smart thermostats, battery changes are not required throughout the lifetime of the device.

To minimise risks related to system or battery failures, the programmable thermostatic display can be overridden, allowing householders to continue to operate their heating system in a basic on/off manner.

Technical monitoring / Additional requirements

No additional technical monitoring questions – existing Heating Controls questions should be used.

The following additional score monitoring questions should be applied:

- Can the householder connect to the Secure Meters Smart Thermostat app via Wi-Fi?
- Is the product installed the Secure Meters Smart Thermostat model C1727?