

Bespoke ECO2 software for calculating savings: features for software development

When a supplier notifies us of a measure under the Energy Company Obligation (ECO2), it must provide the carbon saving or cost score associated with that measure. We understand that suppliers, and other stakeholders working on behalf of suppliers, may wish to develop or adapt software to assist with calculating savings. The table below lists factors to be considered when developing bespoke ECO software for calculating savings.

This note and the table below must be read in conjunction with the ECO2 Guidance: Delivery¹ and ECO2 Measures Table².

We have grouped features into the following categories:

- **A – Inputs**

Data to be entered into the scoring tool.

- **B – Outputs**

Data relating to the carbon saving or cost score of a measure which suppliers must notify to Ofgem following completion of that measure. Developers of scoring software should be aware of the ECO2 Data Dictionary³, in which we describe the format and requirements for all data to be notified to us by suppliers.

- **C – Outputs to be made available on request**

Data relating to the carbon saving or cost score of a measure that must be kept by a supplier for each measure. This data should be made available to Ofgem, technical monitoring agents and auditors on request.

- **D – Processes**

Processes and calculations that are carried out within the software to calculate the carbon saving and cost score of a measure.

- **E – Updates**

Periodic updates that must be made to the scoring tool.

- **F – Checks**

Checks that can be carried out during data input to provide assurance that the data is accurate.

The table below indicates features to be built into bespoke software for calculating ECO savings. Some of these features are mandatory requirements and any bespoke ECO software must have them. Software that does not contain all of the required features will not meet our requirements. We require any ECO bespoke software for calculating savings to be approved by an appropriate UKAS-accredited body.

Our ECO2 Guidance: Delivery explains the factors that suppliers must take into account when calculating and notifying carbon savings and cost savings for measures installed. Any person developing bespoke ECO software must refer to the Guidance for additional details and should not rely on this note alone. The guidance may be amended in the future, and we may publish guidance that supplements the main guidance. Potentially, such amendments and supplements may change the factors that suppliers must take into account when calculating and notifying savings. Bespoke ECO software for calculating savings should be designed to be able to take account of such changes.

¹ Available at: <https://www.ofgem.gov.uk/ofgem-publications/93714/deliveryguidance.pdf>.

² Available at: <https://www.ofgem.gov.uk/ofgem-publications/93004/eco2measurestablefinal.pdf>.

³ Available at: <https://www.ofgem.gov.uk/ofgem-publications/92759/eco2datadictionaryv2.0.pdf>.

Ofgem requirements for bespoke ECO2 scoring software				
	Requirements	Mandatory	Optional	Notes
A	Inputs			
1	Full RdSAP inputs	✓		
2	Full SAP inputs		✓	
3	Obligation category (CERO, CSCO, HHCRO, Rural)		✓	
4	Date of completed installation	✓		
5	Lifetime (L)	✓		Please refer to the ECO2 Measures Table for more information.
6	In use factor (IUF)	✓		Only applied to CERO and CSCO measures. Please refer to the ECO2 Measures Table for more information.
7	Weighted average factor for converting CO _{2e} to CO ₂ (0.925)	✓		Applied to the annual saving for CERO and CSCO measures if SAP 9.92 or RdSAP 9.92 are used. The factor will not be applied if a measure installed in Scotland is scored using SAP 2009 as the savings will already be in tCO ₂ .
8	HHCRO multiplier	✓		For certain HHCRO measures a relevant HHCRO multiplier may also be applied as part of the score calculation. This multiplier may result in an increased or decreased score. Please see chapter 7.b of the ECO2 Guidance: Delivery for more information and details of the HHCRO multipliers.
9	Ability to enter multiple wall insulation types (EWI, IWI, CWI) for a single property, and the relevant percentages of the total exterior walls for each insulation type	✓		
10	Ability to enter multiple roof insulation types (joists, rafters, flat roof, room in roof) for a single property, and the relevant percentages of the total roof area for each insulation type	✓		
11	Information (name, company, relevant qualifications) relating to original assessor, and any other persons who have subsequently been involved in calculating the score	✓		
12	Pre-installation fuel type for the main space heating system(s)	✓		Must be completed for CERO, CSCO and HHCRO measures
13	Post-installation fuel type for the main space heating system(s)	✓		Must be completed for CERO, CSCO and HHCRO measures
B	Outputs			
1	EPC reference number (where relevant)	✓		Applicable if input data from a lodged EPC is used. This field should not be populated if the input data is from an unlogged EPC.
2	Building number	✓		
3	Building name	✓		
4	Flat name/number	✓		
5	Street name	✓		
6	Town	✓		
7	Post code	✓		

8	Total floor area (m ²)	✓		
9	Pre-installation fuel type for the main space heating system(s)	✓		Must be completed for CERO, CSCO and HHCRO measures
10	Post-installation fuel type for the main space heating system(s)	✓		Must be completed for CERO, CSCO and HHCRO measures
11	Percentage of measure installed	✓		This is the amount of the measure actually installed compared to the full installation of that measure. For example, if a house has 100m ² of exterior-facing cavity walls, and 75m ² is insulated with CWI, then percentage of measure installed = 75%.
12	Is the measure installed to an extension of the premises (as defined in RdSAP)?	✓		This allows an extension to be differentiated from the main dwelling.
13	Annual carbon savings (tCO ₂)	✓		Annual carbon savings should be expressed in tCO ₂ to three decimal places. It is recommended that cost and carbon savings are calculated for each measure, regardless of obligation category.
14	Annual cost savings (£)	✓		Annual cost savings should be expressed in pounds and pence to 2 decimal places. It is recommended that cost and carbon savings are calculated for each measure, regardless of obligation category.
15	Name and version of scoring tool used	✓		Format should be exactly as detailed in the approved software list.
16	Lifetime	✓		Please refer to the ECO2 Measures Table for more information.
17	In use factor (IUF)	✓		Only applied to CERO and CSCO measures. Please refer to the ECO2 Measures Table for more information.
18	Weighted average factor for converting CO ₂ e to CO ₂	✓		Applied to the annual saving for CERO and CSCO measures if SAP 9.92 or RdSAP 9.92 are used. The factor will not be applied if a measure installed in Scotland is scored using SAP 2009 as the savings will already be in tCO ₂ .
19	Carbon savings (tCO ₂)	✓		Lifetime carbon savings should be expressed in tCO ₂ to three decimal points.
20	Cost score (£)	✓		Lifetime cost scores should be expressed in pounds sterling to zero decimal places.
21	PCDB version used for scoring calculations	✓		
22	Scores on a measure-by-measure basis	✓		If multiple measures are installed at a premises, each measure, and its associated savings, must be calculated separately.
23	Information (name, company, relevant qualifications) relating to original assessor, and any other persons who have subsequently been involved in calculating the score	✓		
C	Reports - to be made available on request			
1	File showing all inputs used for calculation, all outputs and any information required to match the calculation to the measure. This file should be easy to read, and available both electronically and in hard copy.	✓		
2	'History file' showing source of inputs, all people who have been involved in calculating the score, their relevant qualifications etc.	✓		

D		Processes		
1	Use the ECO-specific methodology for scoring packages of measures, including scoring by date of installation and not SAP/RdSAP default order.	✓		
2	Must <u>not</u> include bespoke occupancy assessment	✓		
3	Calculations must be based on weather data for each postcode	✓		
4	Same fuel prices used for both 'before' and 'after' calculations	✓		
5	Use ECO-specific methodology for scoring repair or replacement of qualifying boilers	✓		
6	Use ECO-specific methodology for scoring repair or replacement of qualifying electric storage heaters	✓		
7	Use ECO-specific order of scoring for boilers and heating controls	✓		Where heating controls are installed at a premises by the same supplier in the same calendar month as a qualifying boiler replacement or repair is conducted, the following sequence of installation must be assumed: a. Qualifying boiler repair or replacement, and b. Installation of compatible heating controls.
8	When scoring other measures at the same property as the repair or replacement of a qualifying electric storage heater or qualifying boiler, apply normal SAP/RdSAP conventions for the other measures	✓		
9	Extensions and new builds: only the part of the measure which exceeds building regulations should be taken into consideration for calculating the ECO savings	✓		
10	Carbon saving (tCO ₂) = S x L x (100% - IUF) S = SAP/RdSAP annual carbon saving (tCO ₂) L = lifetime of measure (years) IUF = in-use factor of the measure	✓		Annual carbon saving will be calculated by applying the factor of 0.925 to convert CO ₂ e into CO ₂ . The factor will not be applied if a measure installed in Scotland is scored using SAP 2009 as the savings will already be in tCO ₂ .
11	Cost score (£) = S x L x HHCRO Multiplier S = SAP/RdSAP annual cost saving L = lifetime of measure (years)	✓		HHCRO Multiplier is only applied to certain HHCRO measures HHCRO scores do not consider IUFs.
E		Updates		
1	Monthly PCDB	✓		Including boiler efficiencies, fuel prices.
2	Any changes to ECO In-Use Factors and Lifetimes	✓		Ofgem will publish any updates to lifetimes on our website in the Measures Table.
3	Additions to list of eligible measures		✓	Please refer to the ECO2 Measures Table for updates.

F	Checks to be carried out during operation of software (we will build on this list once we have had further discussions with suppliers, software companies and UKAS bodies. No individual check is mandatory however we expect software to include a range of checks to ensure accuracy)			
1	The aggregated area of all wall insulation types (CWI, EWI, IWI etc.) should not exceed the total wall area of the property		✓	
2	The aggregated area of all roof insulation types (joists, rafters, flat roof, room in roof) should not exceed the total roof area of the property		✓	
3	CERO secondary measures should be installed within 6 months of primary measures (except for connections to a DHS)		✓	
4	CERO secondary measures should only be installed if the primary measure meets certain conditions, including the minimum condition.		✓	<p>The minimum condition means that insulation must be installed to at least 50%, as applicable, of:</p> <ul style="list-style-type: none"> • the exterior-facing wall area of a premises, • the roof area of a premises, or • the ceiling, floor and wall area of a mobile home. <p>The total area in all of the above cases includes all areas not suitable for insulation.</p> <p>In the case of loft insulation, to meet the minimum condition it must also be:</p> <ul style="list-style-type: none"> • insulated to a depth of no greater than 150mm before installation, and • insulated to a depth of at least 250mm after insulation.

Acronyms

ECO - Energy Company Obligation
CERO - Carbon Emissions Reduction Obligation
CSCO - Carbon Saving Community Obligation
HHCRO - Home Heating Cost Reduction Obligation
IUF - In-Use Factor
tCO₂ - Tonnes of carbon dioxide
tCO₂e - Tonnes of carbon dioxide equivalent
SAP - Standard Assessment Procedure
RdSAP - Reduced Data Standard Assessment Procedure
PCDB - Product Characteristics Database
CWI - Cavity Wall Insulation
EWI - External Wall Insulation
IWI - Internal Wall Insulation
UKAS - The United Kingdom Accreditation Service