Department of Energy & Climate Change

Green Deal and ECO Measures Update 2014

WITHDRAWN

Updated guidance following the 2014 update to the Green Deal Statutory Instrument

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Any enquiries regarding this publication should be sent to us at matthew.webb@decc.gsi.gov.uk

Introduction

1.1. This publication sets out which energy efficiency improvements qualify for Green Deal Finance and the Energy Companies Obligation (ECO).

1.2. It reflects an update made to the Green Deal Measures Statutory Instrument[1] and Green Deal Assessment Software[2] to include a number of new measures and to update the assessment methodology.

1.3. This document updates and consolidates information contained within the following earlier documents:

- *Information for the Supply Chain on Green Deal Measures*[3]
- *Which energy efficiency improvements qualify for Green Deal Finance?*[4]
- *How the Green Deal will reflect the in-situ performance of energy efficiency measures*[5]

1.4. This document is aimed at organisations intending to supply products into the Green Deal and ECO markets.

Background

1.5. The announcement of the Green Deal and ECO programmes in the Energy Act 2011, put in place tools to empower consumers to take responsibility for their own energy efficiency. Since the Act was announced, ECO and Green Deal have facilitated increased market participation for industry through schemes such as Green Deal Communities, ECO Brokerage and Green Deal Finance, the first energy efficiency pay as you save scheme in the world. The programmes have also raised awareness of home energy efficiency among consumers, with many hundreds of thousands choosing to undertake a review of their household energy efficiency and nearly one million measures now installed.

1.6. In the past, Warm Homes, CERT and CESP tackled easier measures successfully prior to the launch of ECO and Green Deal.

1.7. By the end of September 2014, 995,000 energy efficiency measures were installed in around 819,000 properties through ECO, Cashback, Green Deal Finance and the Green

[1] http://www.legislation.gov.uk/ukdsi/2014/9780111116517

[2] http://www.bre.co.uk/sap2012/page.jsp?id=3330

[3] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/69753/InformationSupplyChainFINAL.pdf

[4] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/48406/5504-which-energy-efficiency-improvements-qualify-for-g.pdf

[5] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/48407/5505-how-the-green-deal-will-reflect-the-insitu-perfor.pdf

Deal Home Improvement Fund. Up to the end of October 2014 there have been 389,703 Green Deal Assessments. Between January 2013 and June 2014 the provisional estimated lifetime carbon savings of measures installed under ECO (excluding Affordable Warmth), Cashback and Green Deal was between 9.96-10.17 MtCO2.

Definitions

1.8. The following definitions apply:

Definitions

Measure – A generic energy efficiency improvement which can be made to a property, for example, loft insulation, cavity wall insulation or a replacement boiler.

Improvement – The term used in the Green Deal legal framework to describe the installation of a measure in a property.

Product - The actual product installed with Green Deal finance (falling within a category of qualifying energy improvement).

System – A measure or product which is made up of component parts which is constructed on or off-site, such as External Wall Insulation systems.

The Energy Act 2011 makes clear that the Green Deal may cover measures which generate renewable energy in a cost-effective way, as well as those termed "energy efficiency" measures. Energy efficiency will often be used as short-hand for the types of measures which can lower energy bills and therefore be eligible for the Green Deal, even if not all such measures technically reduce energy use or increase its efficiency in every case. For example, microgeneration will use renewable sources of energy (such as the air, sun and ground heat) to generate energy and this ultimately results in fuel bill savings.

New Measures

1.9. The measure categories defined within the Measures Statutory Instrument covering the domestic and non-domestic Green Deal are given in Table 1. In accordance with the

2014 amendment to the Green Deal Measures Statutory Instrument[6] the following changes have been made to the list of measure categories:

[6] http://www.legislation.gov.uk/ukdsi/2014/9780111116517

- Item (ea) has been added: *circulator pumps*
- Item (rr), *waste water heat recovery devices*, are no longer required to be attached to showers[7]

Table 1 – Green Deal measures categories from the Statutory Instrument

Item	Descriptor	Domestic	Non-domestic
(a)	air source heat pumps	√	√
(b)	biomass boilers	√	√
(c)	biomass room heaters (with radiators)	√	
(d)	cavity wall insulation	√	√
(e)	chillers		√
(ea)	circulator pumps	√	
(f)	cylinder thermostats	√	
(g)	draught proofing	√	√
(h)	duct insulation*		
(i)	gas-fired condensing boilers	√	√
(j)	ground source heat pumps	√	√
(k)	hot water showers*		
(l)	hot water systems	√	√
(m)	hot water taps*		
(n)	external wall insulation systems	√	√
(o)	fan-assisted storage heaters	√	
(p)	flue gas heat recovery devices	√	√
(q)	heating controls for wet central heating systems or warm air systems	√	√
(r)	heating ventilation and air-conditioning controls (including zoning controls)		√
(s)	high performance external doors	√	√
(t)	hot water controls (including timers and temperature controls)		√
(u)	hot water cylinder insulation	√	√
(v)	internal wall insulation systems (for external walls)	√	√
(w)	lighting systems, fittings and controls (including roof-lights, lamps and luminaires)		√

[7] This is to broaden the definition to include waste water heat recovery devices able to store heat for later use.

Item	Descriptor	Domestic	Non-domestic
(x)	loft or rafter insulation (including loft hatch insulation)	√	√
(y)	mechanical ventilation with heat recovery systems		√
(z)	micro combined heat and power	√	√
(aa)	micro wind generation	√	√
(bb)	oil-fired condensing boilers	√	√
(cc)	photovoltaics	√	√
(dd)	pipework insulation*		
(ee)	radiant heating		√
(ff)	replacement glazing	√	√
(gg)	roof insulation	√	√
(hh)	room in roof insulation	√	
(ii)	sealing improvements (including duct sealing)		√
(jj)	secondary glazing	√	√
(kk)	solar blinds, shutters and shading devices		√
(ll)	solar water heating	√	√
(mm)	transpired solar collectors		√
(nn)	under-floor heating	√	√
(oo)	under-floor insulation	√	√
(pp)	variable speed drives for fans and pumps		√ (for pumps)
(qq)	warm-air units	√	√
(rr)	waste water heat recovery devices	√	
(ss)	water source heat pumps	√	√

* Asterisked categories are not currently used, but are included in the SI to allow their use in future, if required.

Measure Eligibility in the Green Deal

1.10. A measure is eligible for the Green Deal finance if it fulfils the following conditions

- It can be modelled in RDSAP[8] for domestic measures or SBEM[9] for non-domestic measures
- It fulfils all conditions stipulated in the Green Deal Code of Practice[10]

[8] Appendix S, page 113 of http://www.bre.co.uk/filelibrary/SAP/2012/SAP-2012_9-92.pdf

[9] http://www.ncm.bre.co.uk/

[10] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/322112/Green_Deal_Code_of_Practice_-_Version_4_-_23_June_2014.pdf

- It is covered by the Green Deal Measures Statutory Instrument[11]
- The installation of the measure is covered by PAS2031[12]
- The measure is included within the Green Deal Assessment methodology[13] and commercial third party software[14]
- If it is to be fully paid for using a Green Deal Finance Plan, it must also meet the Golden Rule, as described below.

1.11. DECC will keep the list of measures under review. Companies interested in adding a new measure to the eligible measures list should first check to see whether it is capable of being modelled within SAP or whether this needs to be assessed through the Appendix Q process[15].

Measure Eligibility in ECO

1.12. ECO consists of three different obligations which obligated energy supply companies are required to meet (CERO, CSCO and HHCRO[16]). The eligibility of measures is not the same for each obligation, as described below; however, the following criteria are common to all three obligations. These must be met if a measure is to count towards an obligation in all cases:

- Building regulations minimum standards and other regulations must be met
- The measure has to be installed in accordance with PAS 2030:2014 (Edition1)[17].
- The carbon and cost savings achieved through installation of the measure must be calculated using Standard Assessment Procedure (SAP) or Reduced Data Standard Assessment Procedure (RdSAP). If a measure cannot be scored using SAP/RdSAP then it can be scored using another appropriate methodology[18].

1.13. In addition to the above:

- CERO and CSCO measures must be recommended by either a Chartered Surveyor Report or a Green Deal Advice Report (GDAR). This is not a requirement for HHCRO.
- CERO focuses on installation of wall and roof-space insulation measures and connections to district heating systems (DHS). Under CERO, these measures are referred to as 'primary measures'. Other insulation measures such as glazing and draught proofing are also eligible as 'secondary measures' if they are installed at the

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[11] http://www.legislation.gov.uk/ukdsi/2014/9780111116517

[12] http://shop.bsigroup.com/en/ProductDetail/?pid=000000000030248254

[13] http://www.bre.co.uk/filelibrary/SAP/2012/OccupancyAssessment2014.pdf

[14] www.bre.co.uk/sap2012/page.jsp?id=3330

[15] See http://www.ncm-pcdb.org.uk/sap/page.jsp?id=20

[16] Carbon Emission Reduction Obligation; Carbon Saving Community Obligation; Home Heating Cost Reduction Obligation

[17] http://shop.bsigroup.com/ProductDetail/?pid=000000000030297314

[18] See chapter 8 of the ECO Guidance for Suppliers for more information on appropriate methodologies https://www.ofgem.gov.uk/ofgem-publications/83100/energycompaniesobligation-measures.pdf

same premises as a 'primary measure'. See chapter 5 of the ECO Guidance for Suppliers for more information.

- CSCO focuses on the installation of insulation measures and connections to district heating systems (DHS) at domestic premises in areas of low income or a rural area. Refer to chapter 6 of the ECO Guidance for Suppliers for more information.
- HHCRO (also known as 'Affordable Warmth') focuses on low income and vulnerable householders, living in private housing, where residents are in receipt of specific benefits and meet other related conditions. A supplier achieves its HHCRO by installing measures that will result in a reduction of heating savings. Suppliers can install both insulation and heating measures, including repair and replacement of boilers. See chapter 7 of the ECO Guidance for Suppliers for more information.

1.13. A full list of measures eligible for ECO is shown in Table 2 below. This list was correct at time of writing. For the most up-to-date measures list, including additional information relating to eligibility under the ECO scheme, please refer to Ofgem's website[19].

Table 2 – Measures eligible for ECO obligations

Measure Type	Measure Name	Eligibility by Obligation		
		CERO	CSCO	HHCRO
Insulation	Internal Wall Insulation Systems, for older solid walls[20]	√	√	√
	Internal Wall Insulation Systems, for newer solid walls	√	√	√
	External Wall Insulation Systems, for older solid walls	√	√	√
	External Wall Insulation Systems, for newer solid walls	√	√	√
	Internal non-brick solid wall insulation	√	√	√
	External non-brick solid wall insulation	√	√	√
	Park Home External Wall Insulation Systems	√	√	√
	Cavity Wall Insulation	√	√	√
	External Wall Insulation for Cavity Walls	√	√	√
	Internal Wall Insulation for Cavity Walls	√	√	√
	Hard-to-treat Cavity Wall Insulation (CWI solution)	√	√	√
	Hard-to-treat Cavity Wall Insulation (SWI solution)	√	√	√
	Party Cavity Wall Insulation	√	√	√
	Loft Insulation Ceiling : Virgin Level	√	√	√
	Loft Insulation Ceiling : Top-up	√	√	√
	Loft Insulation (rafter)	√	√	√
	Room in Roof Insulation	√	√	√
	Flat Roof Insulation	√	√	√
	Under Floor Insulation	√	√	√

[19] https://www.ofgem.gov.uk/ofgem-publications/83100/energycompaniesobligation-measures.pdf

[20] 'Older' means pre-1968 in England and Wales and pre-1966 in Scotland

	Hot Water Cylinder Insulation	√	√	
	Insulation to all primary pipework	√	√	√
	Draught Proofing	√	√	√
	Window Glazing	√	√	√
	Passageway Walk-through Doors	√	√	√
	High Performance External Doors with <=60% glazing area	√	√	√
	High Performance External Doors with >60% glazing area	√	√	√
Heating	Qualifying boiler replacement			√
	Non-qualifying boiler installation			√
	Qualifying boiler Repair (1 year warranty)			√
	Qualifying boiler Repair (2 year warranty)			√
	Electric Storage Heaters			√
	Warm Air Units			√
	Heating Controls			√
	Flue Gas Heat Recovery Device			√
	Heat Recovery Ventilation			√
	Radiator Panels			√
	District Heating Connections - Upgrade (Biomass boiler)	√	√	√
	District Heating Connections - Upgrade (Gas/oil boiler)	√	√	√
	District Heating Connections - Upgrade (CHP)	√	√	√
	District Heating Connections - Upgrade (Energy from Waste)	√	√	√
	District Heating Connections - Upgrade (Ground Source Heat Pump)	√	√	√
	District Heating Connections - Upgrade (Air Source Heat Pump)	√	√	√
	District Heating Connections - Upgrade (Multi Fuel)	√	√	√
	District Heating Connections - New Connection (All generator types)	√	√	√
	District Heating Connections - Heat Meters	√	√	√
Micro-Generation	Air Source Heat Pump			√
	Ground Source Heat Pump			√
	Biomass Boilers			√
	Micro Combined Heat and Power			√
	Photovoltaics			√
	Micro wind			√
	Micro hydro			√

Consumer Protection in the Green Deal

1.14. Only eligible measures can be recommended by a Green Deal Advisor as part of a package of measures on a Green Deal Advice Report. For each measure, a savings figure is calculated using a series of assumptions and based on typical occupancy of the property, allowing the savings for the package of measures to be calculated. The savings estimate for the package of measures is used to define the Golden Rule. The Golden Rule is the maximum value that a first year repayment may be under a Green Deal Finance Plan.

1.15. To further protect consumers, estimated savings are reduced by using 'In-Use-Factors' (IUFs) which take account of the fact that there is often a 'gap' between how measures perform in theory and how they perform in people's properties.

In Use Factors

1.16. IUFs are used for the domestic Green Deal and ECO[21].

1.17. In Green Deal, IUFs are used to increase confidence and consumer protection around the energy savings that can be achieved from installing energy efficiency measures as displayed on a Green Deal Advice Report.

1.18. The reasons for the gap between theoretical savings and the savings people actually realise are complex and will differ from property to property. It is not necessarily the case that products are not performing well, but could be due to the fact that some properties are not as standard as the models assume. Buildings across the UK vary in terms of their construction and their materials. Particularly for existing dwellings, it is often impossible to collect all the information needed to make perfect predictions.

1.19. Reasons for this performance gap are likely to include:

a. the difference between in-situ performance compared with laboratory test results

b. imperfect installations

c. obstructions to insulating parts of walls, e.g. due to garages or conservatories

d. natural variations in the thermal performance of structural and fabric elements that cannot be fully determined by the assessment, e.g. the possibility that the un-insulated walls have different U-values than the standard assumptions and that the U-value varies across different parts of the wall

e. comfort taking by the household, where some households may choose to heat their homes to a higher temperature following the installation of measures

f. the household failing to operate the product/system effectively.

1.20. To account for this gap, IUFs are used to lower the amount of finance that can be offered to consumers by a specified percentage per measure based on application of evidence and research and on expert recommendation.

1.21. The IUFs are applied to the savings estimates shown in the Green Deal Advice Report. This means that the savings figures on the Energy Performance Certificate will be different from the Green Deal Advice Report. The IUF is applied to each measure individually. If more than one measure is installed in a package then savings are calculated sequentially with IUFs applied to each measure individually.

[21] In ECO, IUFs are only applied to measures installed under the CERO and CSCO, not HHCRO

1.22. In case of ECO, a relevant IUF is applied to the lifetime carbon saving of a measure calculated using SAP/RdSAP or an appropriate methodology. IUFs are only applied to measures installed under the CERO and CSCO in ECO. They are not applied to cost savings claimed under HHCRO.

1.23. The IUF is not intended to protect against occupants changing their behaviour, for example, comfort taking to achieve a warmer home. We recognise that such comfort taking can be a major reason for the apparent underperformance. Green Deal Advisors will provide advice to occupiers about the impact of their behaviour on making energy savings. They will also be offered advice during the Green Deal Occupancy Assessment on ways to save energy through simple changes in behaviour.

1.24. IUFs for new measures introduced in Green Deal were determined through examination of evidence on in-situ performance and engagement with the Measures Expert Group.

1.25. IUFs for all Green Deal measures are shown in Table 3, below. This includes the following new measures which have been introduced as part of a methodology and software upgrade in December 2014:

- Energy efficient luminaires
- Replacement heating circulation pump
- Glazing replacement
- Storage waste water heat recovery
- Fan assisted storage heaters (high heat retention)
- Party wall cavity insulation

1.26. DECC is in the process of reviewing IUFs. This will include searching for new evidence on the causes and magnitude of the IUF associated with each measure. On completion of this work some IUFs are likely to change.

Table 3 – In use factors applied for domestic Green Deal measures

Measure	IUF
Loft or rafter insulation	35%
Flat roof insulation	15%
Roof room insulation	25%
Cavity wall insulation	35%
External or internal insulation with cavity wall insulation	30%
Party wall insulation	15%
Internal or external wall insulation (older solid walls)[22]	33%
Internal or external wall insulation (newer solid walls)	25%
Floor insulation (suspended floor)	15%
Floor insulation (solid ground floor)	15%
Draught proofing	15%
Energy efficient luminaires	10%
Hot water cylinder insulation	15%
Cylinder thermostat	10%
Heating controls for wet central heating system	50%
Heating controls for warm air system	50%
Upgrade boiler, same fuel	25%
Change heating to gas condensing boiler (no fuel switch)	25%
Change heating to gas condensing boiler (fuel switch)	25%
Flue gas heat recovery	10%
Condensing oil boiler	25%
Wood logs boiler	25%
Wood pellets boiler	25%
Fan-assisted storage heaters	10%
Fan-assisted storage heaters (high heat retention)	10%
New or replacement warm-air unit	25%
Air source heat pump	25%
Ground source heat pump	10%
Micro-CHP	25%
Circulation pump	10%
Solar water heating	0%
Instantaneous waste water heat recovery	10%
Storage waste water heat recovery	10%
Double glazed windows	15%
Triple glazed windows	15%
Glazing replacement	15%
Secondary glazing	15%
Insulated doors	15%
Photovoltaics	0%
Wind turbine	0%

[22] 'Older' means pre-1968 in England and Wales, pre-1966 in Scotland and pre 1973 in Northern Ireland

1.27. The IUFs for most ECO measures are listed in Schedule 3 of the ECO Order, which is replicated in Table 4 below. Any measure not listed has an IUF of 15%. This list was correct at time of writing. For the most up-to-date measures information, including IUFs and additional information relating to eligibility under the ECO scheme, please refer to the measures list on Ofgem's website[23].

Table 4: Relevant in-use factors for measures installed in CERO and CSCO

Measure	In-Use Factor (percentage)
Cavity wall insulation (including insulation of hard-to-treat cavities)	35%
Connection to a district heating system	10%
Draught proofing	15%
External solid wall insulation for a mobile home	25%
Flat-roof insulation	15%
High performance external doors and passageway walkthrough doors	15%
Loft or rafter insulation	35%
Pipework insulation	15%
Room-in-roof insulation	25%
Secondary or replacement glazing	15%
Solid wall insulation for a solid brick wall built before: a) 1967, if situated in England or Wales; b) 1965, if situated in Scotland	33%
Solid wall insulation for: a) a solid wall which is not built of brick; b) a solid brick wall built in (i) 1967 or later, if situated in England or Wales; (ii) 1965 or later, if situated in Scotland	25%
Under-floor insulation	15%

[23] https://www.ofgem.gov.uk/ofgem-publications/83100/energycompaniesobligation-measures.pdf

Department of Energy & Climate Change
3 Whitehall Place
London SW1A 2AW
www.gov.uk/decc
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