

What measures does the Green Deal cover?

The contents of this paper are subject to the consultation outcome

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The Green Deal is the Coalition Government's flagship policy for improving the energy efficiency of buildings in Great Britain. It is a new market framework. It is based on a key principle that some energy efficiency related changes to properties pay for themselves, in effect, through the resulting savings on fuel bills.

The Green Deal will create a new financing mechanism to allow a range of energy efficiency measures, such as loft insulation or heating controls, to be installed in people's homes and businesses at no upfront cost. The Green Deal will be available from autumn 2012.

Although the Green Deal will not start until late 2012, there is a great deal of anticipation around the types of installations it may fund; both from consumer groups and environmentalists, and those in industry who manufacture, advise on, or install products that will help consumers use less energy.

The following provides an overview of the framework for determining whether a measure or package of measures recommended for a given property are likely to be financed under the Green Deal. The key point to emphasise is that, ultimately, the appropriate measures will differ from property to property.

This paper also provides a summary of DECC's initial position on eligible measures.

What is a Green Deal Measure?

A Green Deal Measure is an “improvement” made to a property which has been financed through the Green Deal. This can include part-financing, where a customer has chosen to pay for some of the work themselves.

However, there will be no standard Green Deal Measure or list of measures that are appropriate for every property. What is appropriate for a property depends on a number of factors including the work already done, the characteristics of the building and in some cases, the geographical location.

The term “measure” is defined in Box 1 below.

Box 1: What is a measure?

For the purposes of this document a “measure” means an improvement made to a property, for example, loft or cavity wall insulation. “Product category” means the type of measure such as mineral wool insulation. “Product” means the branded materials.

It is also worth noting that the Energy Bill makes clear that the Green Deal may cover measures which generate energy as well as those termed “energy efficiency” measures. If a measure is capable of paying for itself self because occupiers use less energy as result of the installation – then it can potentially qualify. Energy efficiency will often be used as short-hand for the types of measures which can attract finance even if this is not technically correct for all cases.

Measures in this context refer to those which can be installed in homes and businesses. Although certain measures will be more appropriate to non-domestic buildings, the broad principles set out in this document apply to both.

What are the steps to obtaining Green Deal finance?

There are essentially three steps to determining whether a given measure or package of measures can be installed using Green Deal finance:

Box 2: Steps to gaining Green Deal finance	
Step One - Is the measure eligible?	Green Deal Measures must meet high-level eligibility criteria in secondary legislation. The detailed eligibility criteria will be consulted on in autumn 2011. The criteria will enable a broad range of measures to attract Green Deal Finance.
Step Two – Is measure suitable for the property?	<p>This will be based on a physical assessment of the particular property and an understanding of what measures have already been installed.</p> <p>The Green Deal assessor will make recommendations on which measures are suitable for the property including those measures likely to be eligible for Green Deal finance.</p>
Step Three – Does the measure meet the Golden Rule in the property?	<p>The Green Deal Provider will then make a finance offer based on an assessment of the estimated energy savings that will result from the measures, if installed (generated in the assessment) and their likely costs for the installation work (including finance costs).</p> <p>The products actually installed in the property must meet health and safety and performance standards referred to in a Green Deal Code of Practice (to be consulted on).</p>

The steps to obtaining finance are therefore a filtering process to ensure the appropriateness of measures for the property in question. There will be no general list of measures for a given property which includes some measures and not others. Provided measures meet the eligibility criteria, they can potentially be installed with Green Deal finance.

Specifying broad criteria means that the Green Deal can be as inclusive as possible.

Whether the installation work is financed will be determined by whether the “Golden Rule” of the Green Deal is met for the installation of those measures in the property in question. This part of the process sits with the “Green Deal Provider”. This calculation will be based on their full costs for the installation work.

Step One - Is the measure eligible?

Broad principles will be enshrined in legislation relating to eligibility. For example, to ensure that measures are fixed to the property – in other words, are “non-portable”. This is because the Green Deal finance is “attached” to the meter of a particular property rather than an individual. Measures should not be capable of being easily removed by someone moving home or premises. These criteria are being developed in consultation with industry experts.

Step Two - Is the measure suitable for the property?

The proposed domestic Green Deal assessment will be based on a strengthened and improved version of the current Energy Performance Certificate (EPC). We are currently reviewing the Standard Assessment Procedure (SAP) to determine what updates are needed to be able to perform the Green Deal assessment and what the role of the assessor will be (see Box 3).

Green Deal Assessors will draw from the “pool” of eligible measures in SAP to make recommendations. The Energy Performance Certificate is based on standardised average costs and savings associated with measures installed in that type of property, and using average energy consumption levels for properties of that type.

We are developing a further advice process to take account of the use of the property by the current occupant. Energy use can vary depending on, for example, the number of occupants and the temperature they heat the property to. It is important to ensure the financing arrangements can work for current and future occupants.

Non-domestic properties vary greatly in type and use. For this sector, a standard assessment will still set out the estimated costs and potential savings for recommended measures where it is possible to do so, or where necessary, identify measures for which specialist consideration is warranted.

Box 3: The Green Deal Assessment

DECC and DCLG have looked at the current EPC to gauge what needs to be improved in order to make it fit for purpose for the Green Deal. As a result of this, we have embarked on a major programme of developing an accreditation and qualification framework that will govern Green Deal assessors. A major part of this development will include ensuring assessors have the skills to advise on Green Deal (and wider measures) in a way that is appropriate to their role and relevant to the property dweller.

Assessors or “Green Deal Advisors” will need to gain qualifications for their role based on new National Occupational Standards that are being developed during 2011. Assessors will also need to become members of a certification body accredited by UKAS against a standard specific to the Green Deal, which is also being developed in 2011.

An industry-wide Call for Evidence and Literature Review on the costs and benefits of a range of measures was issued in March 2011. The Review will help to determine where additional information and data is needed to achieve robust cost and performance data. An indicative list of measures we are gathering evidence around is set out in Box 4.

Box 4: Measures¹	
Heating, ventilation and air conditioning	<ul style="list-style-type: none"> Condensing boilers Heating controls Under-floor heating Heat recovery systems Mechanical ventilation (non-domestic) Flue gas recovery devices
Building fabric	<ul style="list-style-type: none"> Cavity wall insulation Loft insulation Flat roof insulation Internal wall insulation External wall insulation Draught proofing Floor insulation Heating system insulation (cylinder, pipes) Energy efficient glazing and doors
Lighting	<ul style="list-style-type: none"> Lighting fittings Lighting controls
Water heating	<ul style="list-style-type: none"> Innovative hot water systems Water efficient taps and showers
Microgeneration	<ul style="list-style-type: none"> Ground and air source heat pumps Solar thermal Solar PV Biomass boilers Micro-CHP

The Call for Evidence and associated Literature Review gathered existing and new information which will help us to determine the strength and weaknesses of the evidence base for different products: installation costs, lifetime, and performance. This information will enable us to develop an appropriate measures framework. A summary of the findings will be published in Autumn 2011.

Certain factors, such as the quality of installation, how measures perform in real-life, and whether the building occupiers change their energy use patterns, will affect the actual level of energy saving. For this reason, evidence gathering will draw on information and data from field trials and demonstration projects.

Often it only makes sense to install a measure while other renovations are occurring, such as under-floor heating, or to add an additional measure to a package, such as installing heating

¹ This list is not exhaustive. Participants were invited to share information on measures not listed and this evidence is currently being analysed. An updated list will be available in the Green Deal consultation document in Autumn 2011.

controls when fitting an upgraded boiler. Our evidence gathering will therefore examine the effects of sequencing.

In addition, over time we need to understand what we can determine from databases, including the National Energy Efficiency Data framework (NEED) which contains data on how certain measures perform in different types and sizes of property².

Step Three – Does the measure meet the Golden Rule in the property?

The key to whether a measure, or package of measures, is actually financed through the Green Deal is the ‘Golden Rule’.

The expected financial savings resulting from installing measures must be equal to or greater than the cost of repayment over the term of the Green Deal Plan. The repayment period may be the lifetime of the measure or a specified “pay-back” period.

If the estimated annual saving is expected to be equal to or greater than the expected annual repayment costs, the Green Deal “plan” can be said to meet the Golden Rule and can go ahead. The Green Deal Provider should have the flexibility to vary costs to produce the best offer for the customer.

For certain measures an extra upfront subsidy could be sought - via the new Energy Company Obligation, in a qualifying case (see section on Energy Company Obligation below). Alternatively a householder could choose to pay a top-up to bring down the repayment cost.

For example, External Wall Insulation can pay for its self in 30 years based on an installation cost of £7,600³. With a subsidy, the repayment period could be significantly reduced and brought within usual finance periods of 20 to 25 years.

Product assurance

Products installed under the Green Deal must be safe, reliable and capable of performing as intended.

Products must meet existing minimum health and safety and performance standards set out in European and domestic legislation, including in building regulations. For many measures, robust standards already exist.

We are also reviewing the existing landscape of certification bodies, and the nature of warranties and guarantees that exist.

² DECC recently published analysis of energy efficient measures based on data from NEED database which can be found at: http://www.decc.gov.uk/en/content/cms/statistics/energy_stats/en_effic_stats/en_effic_stats.aspx

³ Depending on the cost of finance and recognising that installation costs vary.

The overall requirements for Green Deal Providers and Installers will be brought together in a Green Deal Code of Practice which is being developed by DECC with the assistance of industry experts.

For new products in the domestic sector, we will clarify what the process is for verifying performance and demonstrating that they meet the required standards. Working with industry, environmental bodies and academia we want to create a framework which protects consumers and drives innovation. The process could involve building on existing mechanisms such as the Appendix Q process in SAP and/or creating new “systems” based approaches.

Information collected in the Call for Evidence will provide us with new information relating to the performance of particular products and how the performance has been verified.

Quality of Installation

Even if a measure has a tested ability to save energy it must be fitted to an exact standard to enable these savings in a real life setting.

DECC has contracted the British Standards Institute to develop a Publicly Available Specification (PAS) for the retrofitting of energy efficiency measures in domestic and non-domestic buildings. This will be largely based around existing standards where they exist, and will drive standards where they don't. It is therefore essential that there are robust standards associated with all Green Deal measures. The PAS is being developed with industry bodies and will be subject to a public consultation in the autumn.

Measures paid for under a Green Deal Plan will have to be installed by someone who is authorised under the Green Deal authorisation scheme, and authorised installers will need to comply with a Code of Practice when they carry out work under the Green Deal (which will include minimum training levels through the PAS and customer service standards).

The scheme will work through the existing sector structures. Certification bodies will be assessed by UKAS to ensure that their members are meeting the PAS standard, and are able to provide monitoring and assurance that this is the case. Members of certification bodies who are approved to be meeting the PAS will be added to the Installer Register and are able to install Green Deal financed measures and have use of the Green Deal Quality Mark to demonstrate that they are approved.

The PAS will therefore provide the criteria against which certification bodies should check installation companies to demonstrate that they are able to consistently carry out the installation of relevant measures according to best practice, and have the systems in place to provide consumers with a high level of customer service. This certification will be required in order for companies to be registered as Green Deal installers.

The final PAS – to be published by January 2012 - will provide a consistent method of assessing Green Deal installers across the range of measures that qualify under the Green Deal.

Overarching policy goals

Installing cost-effective measures

Delivering the Green Deal implies favouring the most cost-effective measures first⁴.

Figure 1 demonstrates a marginal abatement cost curve (MACC), which represents the carbon cost effectiveness of a range of measures in the domestic sector in 2020. This is plotted against the total level of abatement possible for each measure by 2020.

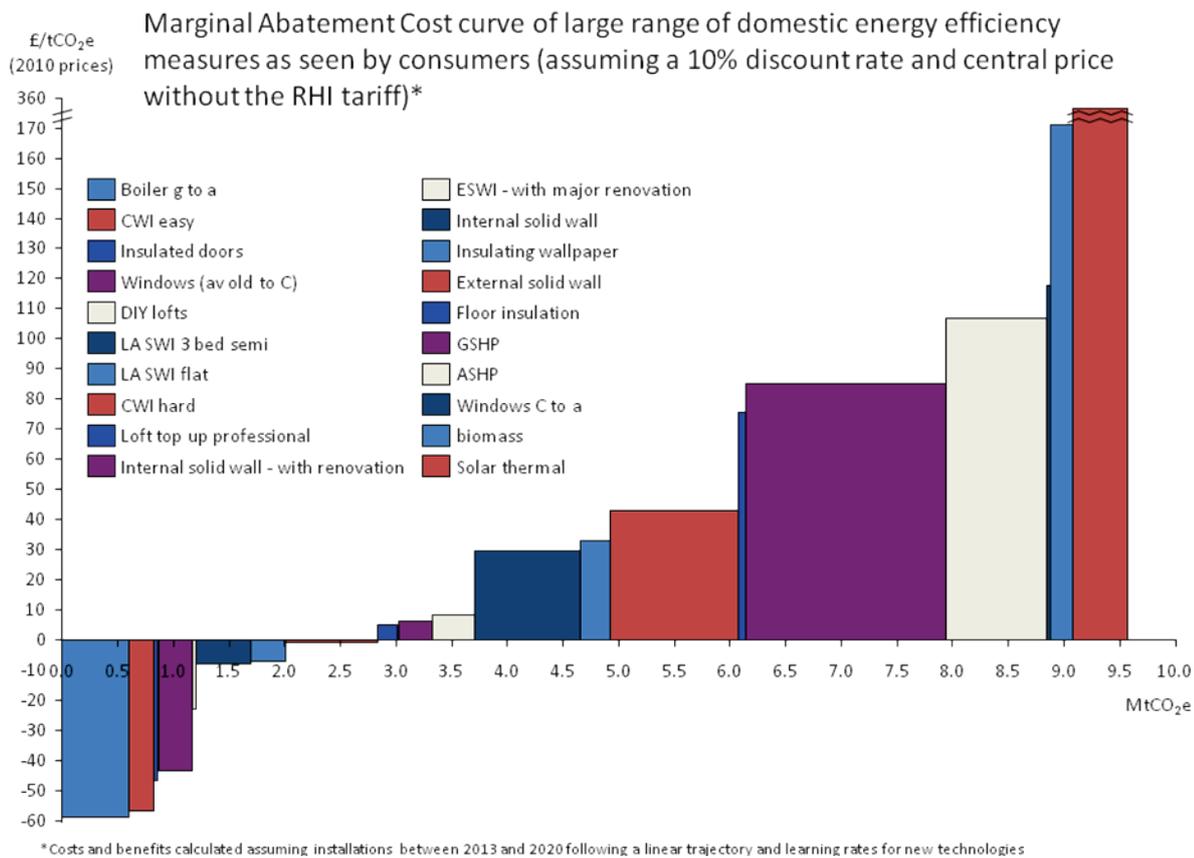
Measures below the 0 £/TCO₂e save the householder money in addition to saving carbon. It is worth noting that for each measure, the blocks represent an average level of cost-effectiveness.

In general, insulation measures are (on these prices) more cost-effective than many Microgeneration technologies - although there is potential for this to change as the size of the market for Microgeneration expands and costs are lowered. The Energy Bill allows for this scenario.

DECC will work with stakeholders to investigate which new products could be on the horizon and what processes and innovations are driving up the performance of measures and driving down costs.

⁴ Although measures will not be restricted to those on the left-hand side of the MACC curve.

Figure 1: Marginal Abatement Cost Curve for domestic energy efficiency measures⁵



Packages of measures and appropriate sequencing

Our intention is that the Green Deal framework should support and promote the installation of packages of measures as far as possible. Where packages are not the right solution for the customer, the appropriate sequencing of installations over time will be encouraged.

Package approaches have the potential to deliver significant savings to consumers on their energy bills. The average saving on the installation of combined loft and cavity wall insulation under the existing Carbon Emissions Reduction Target (CERT) scheme is in excess of £145 a year. Community Energy Savings Programme (CESP), which focuses on a multiple measures approach, delivers savings of around £300 a year per household targeted. The savings from a typical comprehensive package could be larger again.

The consumer may also see a reduction in transaction costs by installing a full package of measures as they will only have to give up one sustained period of time to account for the possible need to be at the property during installation, and deal with the disruption associated with major renovation.

⁵ The MACC curve is based on analysis in the Green Deal Impact Assessment published in December 2010. An updated version will be available alongside the Green Deal consultation in Autumn 2011.

The Green Deal Assessment will produce a report of “recommended measures” that will improve the energy performance of the building in question.

As set out above, the domestic Green Deal Assessment will be based on an improved Energy Performance Certificate (EPC). This consists of an assessment of the physical characteristics of the property, for example, the extent of the heat loss perimeter.

The assessor will also record what energy efficiency improvements have already been made to the property. This information is used to generate the list of recommended measures, and the financial and carbon savings the customer could expect to see if they are installed.

The recommended measures are all those measures that are appropriate for the property which can improve the energy performance of the building, regardless of whether they are eligible for Green Deal finance. For example, the EPC could recommend eight measures. Six of them may meet the golden rule in that property and can therefore be financed through the Green Deal. The remaining two can be financed through other means. Where measures do not meet the golden rule, the customer and the Green Deal Provider may still have the option to pay some of the cost up-front and use Green Deal finance for the rest.

Other financial incentives such as Feed-In-Tariffs and the Renewable Heat Incentive will complement the Green Deal. Green Deal Providers may wish to promote all these options with customers. However, DECC does not intend to create a mechanism for combining these financing streams.

The key point about the assessment is that the recommendations are not necessarily limited to those that can be financed through the Green Deal.

The EPC rating, and the expected carbon and financial savings, are based on the full package of measures being installed. The “savings” generated are cumulative. If the EPC recommends loft insulation, cavity wall insulation and a boiler replacement, the EPC calculates the associated savings as if the loft had been insulated, and/then the cavity walls, and/then the boiler replacement. In doing so, the EPC, promotes the installation of packages of measures.

DECC will also agree a standard “advice leaflet” for Green Deal Assessors and Green Deal Providers to make clear the benefits of installing packages and the importance of the appropriate sequencing of installation. For example, it will set out why it makes sense to make improvements to the fabric of the building before, or alongside, the installation of certain Microgeneration technologies to prevent the loss of renewable heat.

The advice leaflet will also include information on the types of improvements that can be made to the property that are not directly associated with the building’s energy use, but the customer may want to consider. An example may be measures associated with water efficiency.

There may be circumstances where the installation of a full package of measures is not considered appropriate, for example, where a highly disruptive installation does not fit with other changes to the property. Although customers will be encouraged to make as many improvements as possible in one visit, the Green Deal framework will ensure there is some scope to install only certain measures or to do the work over time.

The assessment for non-domestic properties is likely to be based on a standard assessment where possible, but with an additional bespoke or specialised survey appropriate for the type of building or business. This means there will not be a standard list of measures recommended⁶, but specialist assessors will give advice on the types of improvements that could be made and the overall impact on the building's performance.

Links to the Energy Company Obligation

The Government will introduce a new Energy Company Obligation (ECO) alongside Green Deal. The Obligation will require energy companies to support the installation of energy efficiency improvements to homes and will be designed from the ground up to integrate with Green Deal.

ECO will not be like previous obligations with carbon goals able to be achieved across all households. From the outset, the targets will only be achieved within a certain householder group (lower income and vulnerable households where Green Deal finance is less likely to work) and/or with certain property types, such as those needing SWI.

Whilst Green Deal finance supports measures that pay for themselves through savings, if we are to make significant in-roads in cutting overall household emissions we must look beyond these measures to the next most cost-effective measures. In many cases, SWI will be the next most cost-effective measure and, whilst it produces significant savings, these do not repay the relatively high installation costs within a reasonable timeframe. ECO will offer further support in addition to Green Deal finance for these harder to treat properties.

One of the reasons why SWI is currently expensive is that the supply chain is still relatively small in comparison to the scale of delivery we need. Support from the ECO will be a significant driving force, providing market certainty; promoting innovation and investment within the supply chains; and driving down costs and ensuring that all consumers really can improve their homes and benefit from the Green Deal. As the supply increases, costs should fall and the absolute amount of subsidy needed to help the measure meet the Golden Rule should fall.

For households on lower incomes and vulnerable households, the fuel bill savings from improving the energy efficiency of their home may be much lower than the average. This is because these households often under-heat their homes and so they will see smaller or no energy savings. In such cases, helping these households to heat their home to a more suitable level without increasing their bills, rather than fuel bill savings per se, is the principal objective.

To this end, the Energy Bill enables us to set an 'affordable warmth' target to provide for the ECO to promote a wider range costs of measures to those lower income and vulnerable households who are identified as needing support/assistance. Efficient central heating systems, as well as insulation, are key to helping improve people's ability to heat their homes, bringing potential health and social benefits..

⁶ A statutory instrument on measures eligibility will specify the types of measures which can be financed through the Green Deal for non-domestic buildings.

The measures supported by the Energy Company Obligation will be delivered under the tight quality and standards regimes developed for the wider Green Deal.

Take up of Green Deal

Government will closely monitor the level of uptake. The Green Deal is a voluntary mechanism and is being designed to be as attractive as possible to customers. We are carrying out research to better understand whether additional incentives and triggers will be needed to drive demand.

The Green Deal team will work with industry and stakeholders to identify solutions to overcoming other practical barriers to installation. We will seek to identify specific solutions for hard to treat properties including solid wall properties and “hard to fill cavities”, for example relating to training and insurance issues, and what action needs to be taken by industry and by Government as a result.

Lastly, DECC has commissioned a survey of around 2,000 adults across Great Britain, using a stated preference methodology which will enable an assessment of people’s preferences for undertaking the Green Deal. The survey will, amongst other aims, quantify potential demand for the Green Deal across the population, quantify likely take up rates at different levels of ECO support and identify the factors and packages of measures that are most strongly associated with greater demand. The research is currently underway and will report alongside the Green Deal consultation.

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