

Green Deal and ECO consultation: Assessment, Advice, Measures –

DISCLAIMER! This document has been prepared on the basis of the consultation documents published by DECC, and AECB's attempts to interpret them. DECC's consultation documents may well not be representative of the final scheme when it goes 'live', and additionally, our interpretation may be inaccurate. This is only a guide.

AECB will be perusing and commenting a little more on DECC's proposals in the coming weeks, in these pages and on the forum – but DECC has produced an extremely weighty set of documents, so any response will need to be a collective one, sourced through the joint input of membership.

So take a look at the proposals, in the light of the article below (as you see fit), and post your observations, suggestions and responses on the AECB forum [here](#) – and of course, share them with DECC.

Sections in double inverted commas (“”) are quotes from the main DECC consultation document: *The Green Deal and Energy Company Obligation Consultation* (with page numbers given, generally), unless quotes are stated to be from another source.

Numbered questions from DECC's consultation are reproduced **in bold in red**, with DECC's other questions **in red as well**.

Points that AECB suggests members might also wish to comment on, are boxed.

The DECC Green Deal and ECO consultation and associated documents can be found at www.decc.gov.uk/en/content/cms/consultations/green_deal/green_deal.aspx#code . Do please refer to the original documents, and share your observations on the AECB forum.

Green Deal and ECO consultation: Assessment, Advice, Measures

This is mainly covered in Chapters 1 & 2 of the Green Deal consultation paper.

Assessment & advice to householders based on improved RdSAP

The Green Deal assessment tool will consist of an improved EPC.

P23 “This will be based on an improved reduced data Standard Assessment Procedure methodology (RdSAP) in the domestic sector and building on existing Simplified Building Energy Model methodology (SBEM) in the non-domestic sector. This document, along with a bespoke occupancy assessment and a summary report will make up the Green Deal Advice Report (GDAR). GDAR produced will be quality assured in line with certification requirements.”

The possibility of using an alternative assessment tool – rather than RdSAP -- is touched on; see ‘beyond RdSAP?’ below

Measures – what's in?

p 66 “For domestic retrofits the Reduced Data Standard Assessment Procedure (RdSAP) assessment tool, used to produce EPCs for homes, already contains a list of approximately

30 measures which can improve the energy performance of buildings. The list of measures in RdSAP has been used to create the list of qualifying Green Deal energy improvements.”

The Green Deal (Specified Energy Efficiency Improvements and Qualifying Energy Improvements) Order (a separate document on the DECC Green Deal consultation page) lists the following (apologies for poor quality of reproduction)

SCHEDULE 2

Qualifying energy improvements

Art:

The descriptions referred to in article 4 are the installation of—

- a. air source heat pumps,
- b. biomass boilers,
- c. biomass room heaters with radiators,
- d. cavity wall insulation,
- e. high efficiency gas-fired condensing boilers,
- f. oil-fired condensing boilers,
- g. cylinder thermostats,
- h. draught proofing,
- i. energy efficient glazing,
- j. external wall insulation,
- k. fan-assisted replacement storage heaters,
- l. flue gas heat recovery devices,
- m. ground source heat pumps,
- n. heating controls (for wet central heating systems and warm air systems),
- o. high efficiency replacement warm-air units,
- p. high thermal performance external doors,
- q. hot water cylinder insulation,
- r. internal wall insulation,

- s. lighting systems, fittings and controls,
- t. loft or rafter insulation,
- u. mechanical ventilation with heat recovery,
- v. micro combined heat and power,
- w. micro wind generation,
- x. photovoltaics,
- y. roof insulation,
- z. room in roof insulation,
- aa. solar water heating,
- bb. under-floor heating,
- cc. under-floor insulation, or
- dd. waste water heat recovery devices attached to showers.

This is not the last word; DECC wants to make it possible to add in new measures to RdSAP, as they are available and proven (p66) “It is important that the list of qualifying improvements can be added to as new measures come onto the market or new evidence of improved performance becomes available. There are certain measures which are not modelled in RdSAP, such as energy efficient taps and showers that ...have the potential to be included.”

This question might be of concern to AECB members developing sustainable building products.

DECC is seeking views on how measures should qualify to be 'Green Deal' measures

Question 9 p68: Will the existing Appendix Q process, which will allow new measures to be added to the Green Deal assessment tools, and to the list of qualifying improvements, support innovation in the market and how could the process be improved? In particular, what support could SMEs benefit from?

Much more detail about proposed allowable measures, and the assumptions about their costs and energy performance can be found in Annexe A of the impact assessment (ia pp153-178). This section "sets out the key assumptions that are used as inputs in the modelling". It is also possible to download from the same web page as the rest of the consultation documents, the Green Deal Housing Model (GDHM) which "is used to calculate the energy savings that are expected to be delivered by undertaking Green Deal measures."

The assumptions include assumptions on energy performance, installation costs, running cost savings and carbon impacts of the full range of measures, including cylinder insulation, replacement doors, and heating controls and lots more.

This section is probably worth a look, and a comment, if you know about energy performance and assessments.

As well as the arrangements under Appendix Q, on p66: "DECC is also working with the Building Research Establishment and industry representatives to investigate whether District Heating systems can be incorporated into the Green Deal". And lastly under non-domestic Green Deal (see below) suggestions are sought (with evidence) for additional measures.

DECC appears to be of the opinion that some of the measures for non-domestic buildings would be unsuitable for domestic refurb (see non-domestic assessment and measures, below), but AECB members may wish to make representations on these.

Keeping EPCs up-to-date

A 'new style' EPC will in future be a valid basis for a Green Deal Assessment. But at the moment EPCs are valid for 10 years – DECC recognises this may be too long:

QUESTION 5 p53: Should the current EPC validity period for property transactions be used for Green Deal purposes or is a shorter validity period more likely to meet the needs of Green Deal process?

RdSAP – it will be updated, but will the new one be up to the job?

The new version of RdSAP is due to be published in April 2012, though it has been reported that it will be available for training purposes before then.

An article about the expected changes can be found on the NES website here <http://www.nesltd.co.uk/blog/biggest-change-rdsap-yet>. NES state the new version will have "at least 20 changes". These include allowance made for different treatment of different parts of the building, and entering specific U-values where available. According to NES, "Added to the current list of RDSAP Recommendations will be Flat roof insulation, Room In the Roof Insulation, Floor Insulation, Insulated Doors, Waste Water Heat Recovery and Flue Gas Heat Recovery.

"There will be also be a section on the EPC for 'Alternative' Recommendations in addition to the main RdSAP recommendations: Heat pumps, micro CHP, Biomass boilers and External Insulation with cavity insulation.

The new RdSAP also includes the location of the property, to accommodate different weather, and prompts assessors to include an assessment of the risk of driving rain penetration before selecting suitable measures to recommend.

Assessor training will clearly be crucial to determining if these enhancements make RdSAP more accurate in practice – more on training lower down in this section.

Does the cautious underselling of fabric in RdSAP risk inadvertent over-optimism about improvements?

AECB was concerned about this and asked expert on energy assessment and energy advice, Linn Rafferty from JTec Energy and Automation (tweets as @linniR), for more detail on how it was likely to work within the Green Deal.

RdSAP could be said perhaps to err on the side of caution when assessing the fabric of a building for an EPC – which makes sense for buyer's EPC, as otherwise they could be 'overselling' the efficiency of the dwelling. For example, even when revised it will still only require data entry about improvements such as insulation 'when documentary evidence is available that provides supplementary information'.

According to Linn Rafferty, DEAs are indeed advised to choose the worst case option where there is any doubt. If there is evidence of higher insulation than assumed by RdSAP (eg some social housing built to higher standards than the Regs of the time) the DEA can already uplift the assumed insulation somewhat. In the April 2012 revision, the uplift can reflect the actual U-value (again, as long as there is evidence).

But there is still a theoretical possibility that the default to under-estimate fabric efficiency would lead to an overestimate of potential savings from improvements. Linn Rafferty's opinion is that this would be outweighed by the difference made by how the occupier uses the home. "An inaccuracy in a U-value of say 20% for one element is only affecting about 20% of 20% of the entire energy use calculation," she suggested.

AECB members may also wish to comment on this potential anomaly.

An additional safeguard against overestimation of savings would come through the occupancy assessment. Lower than expected bills would warn the assessor that the actual savings weren't going to be as great as the theoretical ones. "Assessors would be expected to investigate this with the householder to try to identify why the bills were low. The intention would be to identify underheating as it is strongly linked with fuel poverty, and referrals to ECO* would be the result," Rafferty explained.

"The changes to RdSAP, and the new requirements for DEAs arising from the revised energy assessor national occupational standards (NOS), are so extensive that CLG has just announced mandatory updating and testing of current DEAs, amounting almost to a requalification exercise." See <http://www.communities.gov.uk/publications/planningandbuilding/updatedomesticenergy>

*(Note: qualifying restrictions are proposed on the availability of the ECO for those in fuel poverty; this is the topic of active debate. More in the section on finance and access)

"In-use" factors – attempting to allow for the performance gap

p79 "It is widely known that measures often perform differently in homes and businesses than in laboratory testing. There is often a gap between the "theoretical" energy savings and actual savings realised for lots of reasons, including how the measures are installed, whether the building is non-standard, and whether customers change their energy

consumption patterns. We are conducting further research, for example on solid wall properties, to help to ensure the savings estimates that are used when calculating the amount of finance available are as accurate as possible.

“...We are exploring the implications of applying an appropriate “in-use factor”. This would mean the savings estimates would be revised down by a specified percentage based on evidence and research, or where this does not exist, on the basis of expert judgement on the scale of the potential difference in performance. The reason is to ensure that savings estimates are not overly optimistic, resulting in inappropriate charges being applied to fuel bills.

“Draft “in use factors” would be based on recommendations made by a task group of experts which DECC will set up. The group will also advise on how to apply this safeguard, for example, whether it is appropriate or not to change savings estimates in RdSAP and SBEM. **DECC will informally consult with industry and the research community on the emerging levels and the results will be included in the Government’s response to the consultation document.**”

Members who wish to input into this process may be able to do so by contacting DECC – the consultation does not make it clear how they plan to run this ‘informal’ process; AECB will investigate this possibility.

Beyond RdSAP – allowing other assessment approaches?

p52: “We ... intend to allow for a full SAP assessment for those properties where it is not appropriate to use RdSAP, where the necessary data is available and it is carried out by a full SAP assessor. “

It isn’t clear on first reading if DECC are taking a view on when full SAP would be called for. And for those who are unhappy even with a full SAP, there is a tiny chink of wriggle room offered: – according to p34 of the consultation:

“We are also consulting on whether we should make provision for rare occasions which fall outside the typical scope of RdSAP, where a slightly different assessment process may be appropriate. In these circumstances, we propose that the ECO company would need to satisfy the scheme administrator that a different assessment method was appropriate.”

This is expanded slightly on p208: “We propose to allow other bespoke calculation models to be used if they can be reasonably expected to give a more accurate assessment.”

There are a number of building elements and possible improvements for which AECB members might feel RdSAP (even in its new incarnation) fails to give accurate assessments and recommendations. Members may wish to suggest alterations to SAP or RdSAP, or may wish to make the case (as invited above) for alternative assessment approaches.

There appears to be little specific mention made of provision for assessment and advice in historic or traditional buildings, with their non-standard construction and special requirements during retrofit – members are urged to flag up any mention they do find, and to comment to DECC on what provisions they believe should be made, if any. Members may also wish to comment on whether there appear to be sufficient safeguards and training in place to ensure that potential pitfalls with inappropriate/faulty IWI installations are avoided.

AECB has learned that there are discussions taking place about the possibility of an provision for a ‘super assessor’ who old be called in, possibly for buildings that are older, or historic. Members might wish to comment on this idea, and might have a view on at what

point, or for what measures, a more detailed, expert assessment than that proposed under the standard GD Assessment is warranted.

Assessment based on Standard Occupancy – so it’s about the fabric

DECC has decided that the basis of assessing the benefits of proposed measures for a Green Deal plan should be based on standard occupancy – making the process at heart one about the fabric, and not the occupant. This means that in practice individual occupants who under heat may be offered a green deal which costs them more than they stand to save in bills. This fact is accepted by DECC, but it is quite difficult to work out exactly how they propose this issue should be addressed – see discussion on fuel poverty, comfort taking and under-heating below, in the section on Finance and Access.

Thus on p79 “We do not intend to take account of “active comfort taking” in the savings estimates as the assessment is based on the physical performance of the building. For example, if a person decides to take the benefit of installing measures by heating their home to a higher temperature, this possibility will not be included in the “in use factors”. However, consumers will be given clear advice on the possible impact on energy savings if they change their behaviour.”

Householders will be asking for advice on major works to their homes, and applying for substantial loans in order to finance these. So the assessment has not only to be got right, the householder has to understand exactly what is being offered. Mis-selling within and outside the energy sector is becoming more and more of an issue, so as expected there are fairly detailed discussions within these documents on the subject of consumer protection (see for example pp51-52 & 57-58).

The fact that actual occupancy is disregarded in the technical assessment and recommendations does not mean occupancy will not be taken into account. Occupancy will guide information and advice to householders, but not the measures recommended or the loan finance available. The idea is that Green Deal Assessors have a responsibility to make very clear to residents the levels of saving or alternatively, of increased expenditure, they are likely to experience, depending on the way they have used energy in the past and how they use it after measures are installed. This is a large responsibility for assessors (see ‘being an assessor below), and how easy it is for them to discharge this responsibility may well depend on the way the Green Deal itself is marketed - also to be touched on later.

The Assessor makes EPC-style recommendations – but doesn’t fix the price

p108 “[The Green Deal] assessment will use standard assumptions about energy prices, heating, lighting and hot water use, and the performance of measures in a property of a given type. This savings estimate will therefore be based on information about the *fabric* properties of that particular dwelling, and will also draw on data about standard energy use at a property of that kind, standard performance of energy efficiency measures, the geographical region, and a rolling average energy price. DECC will have an ongoing role in ensuring that the appropriate data is used within the assessment tool, and is updated at appropriate intervals.”

An online tool will be provided that will allow assessors to feed in the elements of a ‘non-standard’ package, for savings calculations to be made.

The assessor is not responsible for the actual price of the job, which is generally to be agreed between customer, provider and installer. Assessors will be using standard cost estimates (as in impact assessment Appendix A) to derive relative value for money of different suggested measures or packages of measures.

Members may have views on whether it is possible to standardise the costs of measures to this extent, and insight into reasons for cost variation which might impact on the financial viability of the recommendations.

Non-domestic assessment and measures – more scope allowed

p 55 “The current methodology for producing EPCs for non-domestic buildings, the SBEM, will be developed to allow for a Green Deal assessment, and for the assessor to model ‘what if’ scenarios for the implementation of energy efficiency measures, in order to predict the likely energy savings. The Green Deal assessor will be able to adjust some of the standard assumptions currently made in the EPC and utilise information about the occupants’ actual energy consumption.

“If the assessor is an approved DECC assessor, they may use DECC as evidence of the actual energy consumption in the building, otherwise, and where this isn’t appropriate, the method will allow for this information to be provided in an alternative form.

“**However, we invite consultees to inform us of other measures which have particular relevance for non-domestic buildings which are not already listed.** For example, Heating Ventilation and Air Conditioning (HVAC) systems, energy efficiency taps and showers and low energy lighting should make much more significant energy savings in larger non-domestic buildings due to the scale of the retrofit. Our intention is therefore to include low energy lighting, systems and controls in the non-domestic Green Deal.”

p24 “**We would particularly welcome views on whether our approach to the assessment of non-domestic buildings is comprehensive and captures all non-domestic buildings and businesses for which Green Deal might be relevant.**”

Sequencing of recommended measures guided by RdSAP

RdSAP already allows for calculated savings to account for the cumulative effect of installing measures in sequence. This is important as the first measure to be entered in the calculator will be the one shown up to its best advantage, as most subsequent later measures will only show savings from an already improved baseline.

The ‘logical’ way to do this might be to enter the most cost-effective measures first, or alternatively the measures that the household is committed to for its own reasons (though offering alternative calculations can be instructive!).

DECC indicated in its May 2011 document “What measures does the Green Deal cover?” that “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 controls when fitting an upgraded boiler. Our evidence gathering will therefore examine the effects of sequencing. It will be issuing guidance on sequencing of measures.”

Although this issue is of interest to AECB members, it is not immediately clear if the current crop of documents says more about this issue, or whether the guidance on sequencing of recommendations will only be seen when the new version of RdSAP is published.

Being an Assessor

Assessor retraining – new qualification being developed

It is not entirely clear when the details of this important process will be announced. Recently Ann Watson, Managing Director of EAL, the specialist awarding organisation for industry qualifications, said: "If industry is to meet the Green Deal's goals, by developing and delivering training programmes to up skill the workforce in advance of the October launch, then further delays must be kept to a minimum.

"One important aspect needed will be a new qualification to ensure home energy experts, or 'Green Deal Advisors', have the right skills to advise and be trusted by customers. Unfortunately, the final details of this role are not due until secondary legislation is laid before Parliament in the spring. (from - <http://www.oilfiredup.com/site/news/item/1491>).

However some general information is included in the current consultation:

p47 "Green Deal assessors will need to have a mixture of technical knowledge, practical competence to produce the assessment and 'soft' skills to provide households and businesses with the advice they need to make informed decisions. ..The Green Deal assessor will need to do more than just an assessment of the fabric of the property. They will also have to produce an occupancy assessment, explain the Green Deal and the potential impact of the occupant's behaviour on projected savings and explore which package of measures is appropriate for them.

"At the moment, we feel that no existing qualification fully meets the expected needs of the Green Deal marketplace. We are therefore building on the existing energy assessor National Occupational Standard framework to develop a new national qualification for Green Deal assessors...

... We are also considering allowing a process of Accreditation of Prior Experiential Learning (APEL) in which Awarding Organisations work with individuals to map existing skills and knowledge against the content of the Green Deal Advisor National Occupational Standards".

DECC are asking for comments on this: **Question 2: Can you think of any requirements that Green Deal Assessors will need but that may not be covered by the suggested approach, combining National Occupational Standards and Accreditation of Prior Experiential Learning (APEL)?**

Who employs Assessors?

p49 "The Green Deal assessor may be employed in one of several ways. They could be:

- a salaried employee or sub-contractor of one or more Green Deal providers/installers;
- an independent Green Deal assessor commissioned directly by a consumer;
- a public/third sector official or representative of a civil society organisation funded (or self-funded) to deliver Green Deal assessments."

DECC estimates £100 for an assessment – others think this is much too low

This is being 'left to the market'. However, on p91 of the Impact Assessment an indication is given of what is expected:

"The analysis of the impacts of the Green Deal and the ECO assume that the cost of a Green Deal fabric assessment is £75. This level represents a mark-up to recent research suggesting an average cost of £50.99 The additional effort required to make an assessment based on occupancy has been assumed to add some 25-35% to the cost an EPC, though

DECC would welcome views to help refine this estimate. The overall cost per assessment is assumed to be £100.”

While for example a representative of Scottish and Southern Energy is on record as saying he felt even £70 for an in-house assessment would be too much for a Green Deal provider to pay, given that not all assessments will convert to ‘business’, on the other hand Linn Rafferty, who is involved with developing the National Occupational Standard for Green Deal Assessors, feels £100 is rather low:

“The Green Deal Assessor standard is about twice the size of the original energy assessor qualification, and in some areas (especially some non-domestic) it is at a very high level.” She was concerned that £100 was too little to pay for a proper assessment, and also warned of the danger of an oversupply of advisors who undercut each other for work, which could undermine quality.

Quality Assurance

The arrangements for oversight and safeguarding of standards for assessments are covered on pp49-51, and 57-58 of the consultation document.

Who pays for Assessments?

p49 “Consumer research carried out by DECC suggests that a variety of payment solutions would ensure wider appeal. Some potential Green Deal providers are already indicating they are likely to offer assessments at no upfront cost as a way to engage with consumers. It is for this reason that we propose to leave the approach to the payment of assessors and the price of the assessment to the market at this stage. Once the Green Deal market is established we should be able to monitor how the market is operating and consider whether regulatory intervention is necessary at a later date.

Is the basic GD assessment process adequate?

Some of the ‘Pay as You Save’ (PAYS) pilots for the Green Deal put a substantial amount of advisor time into firstly assessing the fabric of individual houses, and then discussing with customers the potential impact of the measures, technically, practically (ie how the work takes place and what disruption is caused) and in terms of how things would look and perform afterwards. One or two reported that in all they spent anything up to £1000 or more per upgraded property, coaxing householders through the process ; but interestingly, the cost was so high in great part because so many initial assessments were undertaken per ‘conversion’ to an actual job – effectively loading a very high cost onto each successful intervention.

Another element highlighted in some pilots was the need for ‘aftercare’ to ensure that residents got the best out of their improvements, for example ensuring residents understood the controls on a new heating system.

In the most acute cases, residents were in danger of damaging their homes and even their health by continuing old habits after radical fabric overhauls, as the Centre for Sustainable Energy report in ‘An evaluation of solid wall insulation in fuel poor households in the private sector’ (<http://www.cse.org.uk/news/view/1592>).

“Because of very poor fabric standards in some properties, we found a number of undesirable practices had developed to counteract drafts, specifically taping up or blocking off controlled ventilation points. In all likelihood these practises will continue post Solid Wall Insulation (SWI) installation out of habit or lack of awareness that the remedial measure is no longer appropriate.

“It is known that SWI will increase the moisture content of the air as it will tend to be warmer as a result of the measure therefore it is particularly important in this instance that controlled ventilation points are allowed to operate as intended in order to avoid a marked increase in condensation problems on cold bridges.”

It has also been pointed out that if a plan for a whole-house retrofit has been prepared but the ‘trigger point’ for a deeper intervention has not been reached, it makes sense to maintain a relationship with the building’s owners so that the opportunity can be taken when the moment is ripe. Note, DECC agrees that staged installations should be accommodated: “The framework allows for customers to choose to install measures over time and to take out more than one Green Deal. In this situation the Green Deal Provider should set out how this approach would affect the amount of finance that would be available. “

DECC proposes to set up a central advice service which may be able to cover some of the work done by advisors on the earlier PAYS schemes.

Members may have useful evidence to offer DECC about the importance of good advice to customers before they opt for work, during the process, and at and after handover.
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