

Feed-in Tariffs Scheme

Consultation on Comprehensive Review Phase

2A: Solar PV cost control

Date: 09 February 2012

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Executive summary

In February 2011 the Government announced its intention to carry out a comprehensive review of the Great Britain Feed-in Tariffs Scheme. In June 2011, following consultation, we published our decision on the “fast-track review” of tariffs for large-scale solar PV installations and anaerobic digestion, and this was implemented through licence modifications which came into effect in August 2011 for PV.

On 19 January 2012, following a consultation which began on 31 October 2011, we announced our decision on generation tariffs to be applied from 1 April 2012 to all solar PV installations with an eligibility date on or after 3 March 2012. We are issuing further decisions on other matters associated with those tariffs; in particular our plans for an energy efficiency requirement and tariffs for multi-installation projects. These decisions are published in a separate paper.

In this document we are consulting on generation tariffs to be applied to solar PV installations with an eligibility date on or after 1 July 2012, and on the mechanism which should be applied to the degeneration of tariffs thereafter.

Specifically we are recommending a further reduction to solar PV tariffs from 1 July. We have proposed three alternative tariff tables, the choice of which would depend on the volume of deployment of solar PV in March and April 2012. We are proposing a mechanism for tariff degeneration after July which would provide a reliable method of financial control while at the same time giving a good measure of certainty to the sector and to consumers about the future path of tariffs. We are also consulting here on a potential review of export tariffs, and on whether we should reduce the period for which tariffs for PV installations should be applied, from 25 to 20 years.

This document should be considered alongside the Consultation on Comprehensive Review Phase 2B: Tariffs for non-PV technologies and scheme administration issues, covering all the remaining issues in the FITs comprehensive review, such as tariffs for non-PV technologies, preliminary accreditation and other administrative issues.

How to respond

**The closing date for responses is:
3 April 2012**

Online responses are preferred and can be submitted via DECC's consultation hub: at the following link: <https://econsultation.decc.gov.uk/office-for-renewable-energy-deployment-ored/fits-review-phase2a>.

If you are unable to submit your response online please send it in an email to: fits@decc.gsi.gov.uk. Please use the template provided to record your response, which can be found at the consultation webpage alongside the other consultation documents:

http://www.decc.gov.uk/en/content/cms/consultations/fits_rev_ph2a/fits_rev_ph2a.aspx

Alternatively, hard copy replies should be sent to:

FITs Team, Office of Renewable Energy Deployment,
Department of Energy and Climate Change,
4th Floor, Area A,
3 – 8 Whitehall Place,
London, SW1A 2AW.

Additional copies

You may make copies of this document without seeking permission. Further printed copies of the consultation document can be obtained from:

FITs Team, Office of Renewable Energy Deployment,
Department of Energy and Climate Change,
4th Floor, Area A,
3 – 8 Whitehall Place,
London, SW1A 2AW.
Telephone: 0300 068 5733

An electronic version can be found at:

http://www.decc.gov.uk/en/content/cms/consultations/fits_rev_ph2a/fits_rev_ph2a.aspx

Other versions of the document are available on request.

Confidentiality and Data Protection

When this consultation ends, members of the public may ask for a copy of responses under freedom of information legislation. If you do not want your response – including your name, contact details and any other personal information – to be made publicly available, please say so clearly in writing when you send your response to the consultation. Please note, if your computer automatically includes a confidentiality disclaimer, that will not count as a confidentiality request.

Please explain why you need to keep details confidential. We will take your reasons into account if someone asks for this information under freedom of information legislation. But, because of the law, we cannot promise that we will always be able to keep those details confidential.

We will summarise all responses and place this summary on our website at www.decc.gsi.gov.uk. This summary will include a list of names of organisations that responded but not people's personal names, addresses or other contact details.

Help with queries

Please direct any queries about this consultation to our dedicated e-mail address:

fits@decc.gsi.gov.uk,

or in writing to:

FITs Team, Office for Renewable Energy Deployment,
Department of Energy and Climate Change,
4th Floor, Area A/B,
3 – 8 Whitehall Place,
London, SW1A 2AW
Telephone: 0300 068 5733

If you have any comments or complaints about the consultation process, please address them to:

DECC Consultation Coordinator
Area 6A
3 Whitehall Place
London, SW1A 2AW
Email: Consultation.coordinator@decc.gsi.gov.uk

A copy of the Code of practice on Consultations can be found at:

<http://www.berr.gov.uk/files/file47158.pdf>

Chapter 1. Solar PV tariffs from July

Summary

- Explains rationale for moving away from exclusive focus on rates of return as a basis for setting future tariffs
- Sets out three alternative options for tariffs to apply from 1 July 2012, depending on the extent of deployment in March and April 2012
- For installations •4kW installed capacity, these options vary between 15.7p (if deployment in this period is between 150 and 200 MW), 16.5p (if deployment is lower than this), and 13.6p (if deployment is higher)

Background

1. We have already confirmed our decision on generation tariffs to be applied from 1 April in respect of all solar PV installations with an eligibility date from 3 March: 21p for ≤ 4 kW installations, with lower tariffs applying to different bands of larger installations. The necessary changes were included in the licence modifications laid before Parliament on 19 January 2012. These tariffs will be applied from 1 April, provided they pass through the Parliamentary procedures. Further conditions will be attached to these tariffs, to deal with energy efficiency and multiple installations, as explained in the decision document published today, and subject to Parliamentary procedures. The conditions will apply only to installations with an eligibility date on or after 1 April 2012. The following chapter proposes new PV tariffs to take effect from 1 July.
2. When the FITs scheme was launched, the tariffs for solar PV were intended to provide a return on investment of around 5% for well located installations. This was at the bottom end of the 5-8% range considered appropriate for other

technologies in receipt of FITs payments because PV was considered to be easier to deploy and to carry a lower risk to investors.

3. In the consultation on phase 1 of the FITs review, we proposed new tariffs from 1 April 2012 which were designed to deliver an average rate of return of 5% for installations larger than 4kW, and to deliver an average rate of return of 4.5% for installations up to 4kW. The justification for this lower target return for $\leq 4\text{kW}$ installations was that the changed investment climate since FITs was launched meant that 4.5% was more appropriate for householders.

Evidence

4. Respondents to the consultation have in general not agreed with 4.5-5% as appropriate target rates of return. Some have suggested that a reasonable minimum average rate of return to retain a sustainable solar PV industry is 6% (for domestic installations) and 8% (for commercial). Others have argued for rates of return even higher than this. It is important to note that any one 'target' rate of return is based on a typical well located installation consuming approximately 50% of the electricity generated on site. The actual rates of return available will vary considerably depending on the location of the installation, efficiency of the panels used, on site consumption, actual installation costs, and other factors, and there are different views as to what average rate of return any particular set of tariffs would yield.
5. Rates of return have clearly grown on average to much higher than the 4.5-5% that we signalled as appropriate (though we recognise that there is a wide range of actual returns across different kinds of project). This was amply demonstrated by the surge in installations during 2011, which began in earnest in September and peaked in early December. By the end of this period, installed capacity had reached over 900 MW, compared with the 116 MW that had been predicted by this stage when the scheme was introduced. By the end of March 2012 we estimate that PV deployment may have reached 1.3 GW, and the cumulative cost to consumers over 25 years of these installations would be in the region of £7 billion (in real, discounted terms). We do not want to get back to a situation where returns are so high that we see a further demand surge and allow individual investors to earn returns well over 10%, at the expense of the generality of energy consumers. We do not accept that the FITs scheme should give rates of return sufficiently generous to go beyond its statutory purpose, as defined in the Energy Act.

6. A study conducted for DECC by Parsons Brinckerhoff (PB), published on 8 February, supplemented by anecdotal evidence and discussions with the industry, has confirmed that:
 - (a) Costs associated with manufacturing and installing solar panels have come down even faster than anticipated last October;
 - (b) They are expected to continue to do so;
 - (c) But there is considerable uncertainty around the future costs, with a huge difference in projected costs between the high and low scenarios, and consequently a wide range of potential average rates of return for any particular set of tariffs. In particular, some of the cost reductions forecast by PB for later in 2012 are considered unrealistic by PV industry representatives, who note that the current worldwide glut of PV panels is likely to reduce, with rationalisation amongst manufacturers and higher demand in China following the introduction of a FITs scheme there. There is also considerable uncertainty about the extent of economies of scale enjoyed by those responsible for multiple installations.
7. In view of this, as well as our experience of the huge surge leading up to mid-December and the impact this had on the Levies Control Framework budget (which currently includes FITs, the Renewables Obligation and the Warm Home Discount), there is a case for moving away from trying to set tariffs in such a way as to provide a precise rate of return of 4.5–5% for investors. We do not have robust evidence for how demand responds to average rates of return in practice, and do not believe that we can sensibly target a particular rate or be sure that any particular tariff will in practice secure that rate. We should nevertheless continue to use all available cost information to inform our expectations of the rates of return under different cost assumptions.

Our Proposal

8. The dynamic nature of the PV industry, and the importance of living within a tightly constrained budget, suggests that we should move towards a tariff structure which is directly responsive to changes in deployment. This will enable us to control costs while maintaining an indirect link with returns: if costs go down and rates of return go up more than expected, the tariffs will reduce automatically, bringing returns back to a reasonable level.
9. We therefore propose that rather than targeting any specific rate of return, from 1 July we should set tariffs at a level that would deliver returns broadly within the range of 4.5-8% under central cost assumptions. In order to ensure that the tariffs

track changes in the market, and that expenditure under the scheme is kept within budget, we propose that the tariffs for 1 July should be dependent on the levels of actual deployment of new eligible installations seen in March and April (i.e. the first two months under the new tariff table). Furthermore, we propose that following 1 July, we should put in place a degression mechanism where the speed of tariff reductions is contingent on deployment.

10. We have modelled three starting scenarios (all of which assume that we retain a tariff period of 25 years – see next chapter):

- (a) Targeting average rates of return under PB's central cost scenario of around 5-8%, with around 5% for domestic installations. This produces a tariff of **13.6p** for ≤4kW installations, which gives a return on investment (ROI) ranging from 0.5% under the “high” end of PB's predicted costs, and 10% if costs fall to the “low” end of their predicted range. This option would be our preference if deployment (i.e. new capacity installed and with an eligibility date between 3 March and end- April 2012) exceeds 200 MW.
- (b) Reducing tariffs by around 25% from the 1 April levels by 1 July. This yields average ROIs of 5-8% for most bands under PB's central cost scenario (it leads to modelled ROIs over 8% for the largest two bands). This produces a tariff of **15.7p** for ≤4kW installations, with a mid-range ROI of 6% (ranging from 1.1% to 11.1%). This option would be our preference if deployment during March and April 2012 is between 150 and 200 MW.
- (c) Making a cut of around 21% from April. This produces a tariff of **16.5p** for ≤4kW installations, with a mid-range ROI of 6.1%. This option would be our preference if deployment during March and April 2012 is less than 150 MW.

11. The full tariff 1 July 2012 table for these options is shown below:

Band (kW)	1 April tariff	Option A	Option B	Option C
≤4kW	21p	13.6p	15.7p	16.5p
>4kW-10kW	16.8p	10.9p	12.6p	13.2p
>10-50kW	15.2p	9.9p	11.4p	11.9p
>50-150kW	12.9p	7.7p	9.7p	10.1p
>150-250kW	12.9p	5.8p	8p	10.1p
>250-5000kW	8.9p	4.7p	6.8p	7.1p

Stand alone ¹	8.9p	4.7p	6.8p	7.1p
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12. Tariffs for multiple installations (those where the generator, or person entitled to receive FITs payments, receives such payments for more than 25 separate installations) will be at a proportionately lower rate, reflecting their economies of scale. In the October Consultation Document we proposed that that proportion should be 80%, and that is the figure that is being adopted for the 1 April tariff. We are continuing to collect evidence to check whether 80% is the most appropriate figure, bearing in mind the range of different business models engaged: earlier evidence from PB suggested that it might provide quite high rates of return, but this was disputed by others from the industry. We would particularly welcome any new evidence on this point.

13. We suggest that the “stand alone rate”, which will be 8.9p on 1 April 2012 and is proposed to reduce on 1 July and thereafter according to the degression mechanism proposed in the next chapter, is the rate which will be applied to those installations which do not meet the energy efficiency requirement². In other words, it is not being assumed that those installations will continue to attract a tariff at 2 ROCs, which from 1 July will be higher than the proposed stand alone tariff.

Consultation Questions: <i>Please support your response with arguments</i>	
1.	Do you agree that in setting tariffs we should move away from explicitly targeting an average rate of return of 4.5-5%?
2.	Do you agree that the tariff table from 1 July should depend on the volume of deployment in the first two months of the post-3 March tariff tables?
3.	Do you agree that the ranges of tariffs displayed in Options A, B and C are broadly appropriate, and that the proposed deployment triggers for the choice between these options are the correct ones?
4.	Do you agree that tariffs for multiple installations (over 25 installations) should continue to be 80% of the relevant individual tariff, and do you have any cost information to support your response?
5.	Do you agree that installations that do not meet the energy efficiency

¹ Installations which do not meet the energy efficiency requirement (see footnote on next page) will also attract tariffs at this rate, with the exception of the 1 April tariff which will be 9p.

² As defined in the Government Response to Phase 1 of the Feed-in Tariffs review, published today

requirement should attract the “stand alone rate”?

Chapter 2. Future tariff-setting and cost control

Summary

- Proposes mechanism for changing tariffs after July
- This includes:
 - automatic baseline depression (proposed at 10% every 6 months);
 - with depression steps brought forward if deployment exceeds pre-determined levels; and
 - an annual review to check that the system is working well
- Proposes review of export tariffs, possible reduction in tariff lifetimes for PV, and consideration of future of index-linking

Background

14. As announced at the launch of the FITs comprehensive review, maintaining a tight grip on spending is a major priority for the review. In the period up to the end of the 2014/15 financial year, this means ensuring that FITs spending is affordable within the Levies Control Framework (LCF), as explained in Chapter 1. The need for greater budgetary control was also the main driver of the urgent action on PV in the fast-track review and Phase 1 of the comprehensive review. This is particularly important given that LCF spending has a direct impact on energy bills, even if relatively limited as a proportion of overall bills.

15. In the longer term, it is also important that the scheme delivers value for money and that costs can be controlled through transparent and predictable changes to tariffs, avoiding the need for emergency reviews. As well as helping the

Government to manage the FITs scheme more effectively, this will also help in providing a smoother future path for the renewables industry.

16. We know from experience of the Great Britain FITs scheme that solar PV has so far been the easiest FITs technology to deploy and, to date, the technology most subject to rapid falls in costs.
17. Under the terms of the LCF there is a central trajectory of spending for FITs, and for the other schemes, against which the budgetary performance is measured. The objective of the cost control model is to keep as close as possible to the cost trajectory within a set of agreed tolerances.
18. The basic options for managing costs have been discussed in some detail with interested stakeholders during the comprehensive review process. These are:
 - (a) *Pre-planned degression*, where tariffs are adjusted according to pre-set numbers;
 - (b) *Contingent degression*, where tariffs are adjusted automatically, though with time lags, in response to deployment levels or other triggers such as expenditure; this is the system that has been adopted in Germany;
 - (c) *More frequent reviews* of tariffs than the current expected 3-4 year time frame which could provide quicker response to cost and market changes;
 - (d) *Rationing/quotas*, where there is a fixed allocation of new capacity or funding allocated each year.
19. All these options would entail some trade-off between cost certainty for the Government and bill payers, and the long-term certainty that we want to deliver for investors. Option (a) would provide maximum reassurance for investors and would incentivise cost reduction across all FITS technologies, but would not, on its own, allow Government to control the budget in the face of unanticipated changes in deployment levels. Option (d) provides maximum cost control for Government, but would provide no forward certainty for investors or individual generators (consumers) and inevitably lead to a stop-start industry.
20. Industry representatives have given a view that changes should be regular and predictable, that developers should have reasonable notice of changes, and that the level of changes should reflect genuine and up-to-date market developments. They have made clear that a system of rationing (Option d) would be very difficult for them to work with, and it would also bring problems of fairness and

administrative difficulties. We therefore do not propose to include Option (d) in our cost control design.

Our proposal

21. We consider that the most effective cost-control scheme, balancing the objectives described above, would need to include elements of Options (a), (b) and (c).
22. First, we propose that there should be a baseline depression timetable which would set out in advance the tariff reductions that would be applied. This would be designed to incentivise all those involved in the supply chain progressively to reduce their costs. For solar PV we propose a tariff reduction in October (i.e. three months after the 1 July tariff changes) of 5% , followed by a depression rate of 10% every 6 months. This is consistent with much of the market intelligence we have obtained about the expected decline in costs. We accept, however, that there remains some uncertainty around the speed of this decline, so we would also welcome views on whether a lower baseline depression rate – perhaps 5% every 6 months – would be more appropriate.
23. Second, we propose that a contingent depression mechanism should be applied if actual deployment levels exceed 125% of expected levels before the date of the relevant planned baseline depression. Unlike the German model, which has depression at fixed times with the size of the steps determined by deployment, in this proposal the size of the individual steps would be known in advance and the timing would be determined by the level of deployment.
24. Expected levels of deployment will be published in advance by DECC. The measure of actual deployment at any given point would be determined by Ofgem, based on their analysis of the CFR, the MCS database and other information they consider relevant. This measure of deployment would be published monthly. If and when the actual measure of deployment published by Ofgem exceeds the expected deployment level as previously published by DECC, an immediate announcement would be made of a two-month notice period before the next Tariff Point is applied.
25. If actual deployment levels exceed expected levels by a significant amount consistently over a period of months, it is possible that this contingent depression trigger could be pulled several times during the course of a year, and that the two-month notice periods could overlap. This could result in changes of tariffs more rapid than once every two months, but each individual change will have had two months' notice. Such rapid changes to the size of the subsidy would be in direct response to market signals indicating that the market is booming, so the

tariff changes should have a stabilising rather than a destabilising effect, as well as allowing us to keep expenditure within budget.

26. Third, the Government would carry out annual reviews, in discussion with representatives from the industry and other stakeholders, to check if this mechanism is controlling costs to an adequate extent and allowing the Scheme to achieve its statutory objectives. Any changes to the mechanisms proposed following one of these reviews would be the subject of further consultation and Parliamentary procedures as set out in the Energy Act.
27. Some commentators have suggested that tariff cuts should either stop or slow down when the tariffs reach 2 ROCs (8.9p from 1 April 2012 - the marginal cost of meeting the renewables target at the time of publication). They argue that at this rate we should be encouraging faster deployment as this is potentially better value for money than offshore wind, which we are subsidising at these rates; and that the cost of support at this tariff, even at greater deployment volumes, would be relatively low. On the other hand, there are some unquantified costs associated with solar PV (e.g. network balancing costs) which reduce its value for money, and in any event it could be argued that we should not be subsidising generators to an extent that they earn significantly high rents, well above our indicative ROI range. The tables below assume that we continue to degress at the same rate after reaching the 2 ROC threshold. An alternative approach could be to propose either a reduction in the automatic baseline degression percentage, or a relaxation in the contingent degression triggers, (or both), once this threshold has been reached.
28. It is possible that costs may reduce at faster rates at one end of the solar PV spectrum (e.g. for the larger installations) than at the other, or that certain niche markets might thrive while others are stalling. It may therefore be appropriate for the proposed deployment triggers to be divided up by bands - perhaps a domestic band (up to 10kW), a small commercial band (10-50kW) and a large commercial band (over 50kW and stand alone). This would mean that if, for example, costs fell more than we expect at the large commercial end of the market, triggering a cut in tariffs through the contingent degression mechanism, this would not penalise the small domestic installations, which may still be struggling at the then prevailing tariffs.
29. The tables below indicate how the baseline and contingent degression mechanisms could work, with a baseline degression of 10% every six months. These have been modelled on central assumptions about cost reductions over the next three years, which suggest additional deployment in that period of between 2.7 GW and 3.1 GW (under the different starting tariffs). To avoid further complexity, these have not been divided up on the basis of “banded” degression

triggers, though this will be done if it is decided to divide the deployment bands as described in the paragraph above.

30. An alternative set of tables could be constructed around a more conservative assumption, with baseline depression of just 5% every 6 months. In these circumstances we would expect that the contingent triggers are likely to be pulled more frequently. Tariffs for multiple installations (those where the generator, or person entitled to receive FITs payments, receives such payments for more than 25 separate installations) will be at a fixed proportion of the tariff otherwise applicable to the size of the installation, as explained in Chapter One.

**Table 1: Proposed generation tariffs for solar PV from 1.4.2012 to 1.4.2015:
OPTION A STARTING TARIFF, Baseline Depression at 10% every 6 months**

Band (kW)	Tariff Pt 1 April 2012	Tariff Pt 2 July 2012	Tariff Pt 3 Oct 2012	Tariff Pt 4 April 2013	Tariff Pt 5 Oct 2013	Tariff Pt 6 April 2014	Tariff Pt 7 Oct 2014	Tariff Pt 8 April 2015
≤ 4kW	21p	13.6p	12.9p	11.6p	10.4p	9.4p	8.5p	7.7p
>4-10kW	16.8p	10.9 p	10.4p	9.4p	8.5p	7.7p	6.9p	6.2p
>10-50kW	15.2p	9.9p	9.4p	8.5p	7.7p	6.9p	6.2p	5.6p
>50-150kW	12.9p	7.7p	7.3p	6.6p	5.9p	5.3p	4.8p	4.3p
>150-250kW	12.9p	5.8p	5.2p	4.7p	4.2p	3.8p	3.4p	3p
>250-5000kW	8.9p	4.7p	4.5p	4.1p	3.7p	3.3p	3p	2.7p
Stand alone	8.9p	4.7p	4.5p	4.1p	3.7p	3.3p	3p	2.7p

Tariff Pt 1: applies from 1 April 2012

Tariff Pt 2: applies from 1 July 2012

Tariff Pt 3: applies from 1 October 2012, or 2 months after total deployment since 1 April 2012 exceeds 225 MW (whichever of these dates is earlier)

Tariff Pt 4: applies from 1 April 2013, or 2 months after total deployment since 1 April 2012 exceeds 563 MW (whichever of these dates is earlier)

Tariff Pt 5: applies from 1 October 2013, or 2 months after total deployment since 1 April 2012 exceeds 1075 MW (whichever of these dates is earlier)

Tariff Pt 6: applies from 1 April 2014, or 2 months after total deployment since 1 April 2012 exceeds 1675 MW (whichever of these dates is earlier)

Tariff Pt 7: applies from 1 October 2014, or 2 months after total deployment since 1 April 2012 exceeds 2542 MW (whichever of these dates is earlier)

Tariff Pt 8: applies from 1 April 2015, or 2 months after total deployment since 1 April 2012 exceeds 3542 MW (whichever of these dates is earlier)

**Table 2: Proposed generation tariffs for solar PV from 1.4.2012 to 1.4.2015:
OPTION B STARTING TARIFF, Baseline Degression at 10% every 6 months**

Band (kW)	Tariff Pt 1	Tariff Pt 2	Tariff Pt 3	Tariff Pt 4	Tariff Pt 5	Tariff Pt 6	Tariff Pt 7	Tariff Pt 8
≤ 4kW	21p	15.7p	14.9p	13.4p	12.1p	10.9p	9.8p	8.8p
>4-10kW	16.8p	12.6p	12p	10.8p	9.7p	8.7p	7.8p	7p
>10-50kW	15.2p	11.4p	10.8p	9.7p	8.7p	7.8p	7p	6.3p
>50-150kW	12.9p	9.7p	9.2p	8.3p	7.5p	6.8p	6.1p	5.5p
>150-250kW	12.9p	8p	7.6p	6.9p	6.2p	5.6p	5p	4.5p
>250-5000kW	8.9p	6.8 p	6.5p	6p	5.4p	4.9p	4.4p	4p
Stand alone	8.9p	6.8p	6.5p	6p	5.4p	4.9p	4.4p	4p

Tariff Pt 1: applies from 1 April 2012

Tariff Pt 2: applies from 1 July 2012

Tariff Pt 3: applies from 1 October 2012, or 2 months after total deployment since 1 April 2012 exceeds 217 MW (whichever of these dates is earlier)

Tariff Pt 4: applies from 1 April 2013, or 2 months after total deployment since 1 April 2012 exceeds 542 MW (whichever of these dates is earlier)

Tariff Pt 5: applies from 1 October 2013, or 2 months after total deployment since 1 April 2012 exceeds 1033 MW (whichever of these dates is earlier)

Tariff Pt 6: applies from 1 April 2014, or 2 months after total deployment since 1 April 2012 exceeds 1608 MW (whichever of these dates is earlier)

Tariff Pt 7: applies from 1 October 2014, or 2 months after total deployment since 1 April 2012 exceeds 2463 MW (whichever of these dates is earlier)

Tariff Pt 8: applies from 1 April 2015, or 2 months after total deployment since 1 April 2012 exceeds 3456 MW (whichever of these dates is earlier)

Table 3: Proposed generation tariffs for solar PV from 1.4.2012 to 1.4.2015: OPTION C STARTING TARIFF, Baseline Degression 10% every 6 months

Band (kW)	Tariff Pt 1	Tariff Pt 2	Tariff Pt 3	Tariff Pt 4	Tariff Pt 5	Tariff Pt 6	Tariff Pt 7	Tariff Pt 8
	April 2012	July 2012	Oct 2012	April 2013	Oct 2013	April 2014	Oct 2014	April 2015
≤ 4kW	21p	16.5p	15.7p	14.1p	12.7p	11.4p	10.3p	9.3p
>4-10kW	16.8p	13.2p	12.5p	11.3p	10.2p	9.2p	8.3p	7.5p
>10-50kW	15.2p	11.9p	11.3p	10.2p	9.2p	8.3p	7.5p	6.8p
>50-150kW	12.9p	10.1p	9.6p	8.6p	7.7p	6.9p	6.2p	5.6p
>150-250kW	12.9p	10.1p	9.6p	8.6p	7.7p	6.9p	6.2p	5.6p
>250-5000kW	8.9p	7.1p	6.7p	6p	5.4p	4.9p	4.4p	4p
Stand alone	8.9p	7.1p	6.7p	6p	5.4p	4.9p	4.4p	4p

Tariff Pt 1: applies from 1 April 2012

Tariff Pt 2: applies from 1 July 2012

Tariff Pt 3: applies from 1 October 2012, or 2 months after total deployment since 1 April 2012 exceeds 208 MW (whichever of these dates is earlier)

Tariff Pt 4: applies from 1 April 2013, or 2 months after total deployment since 1 April 2012 exceeds 521 MW (whichever of these dates is earlier)

Tariff Pt 5: applies from 1 October 2013, or 2 months after total deployment since 1 April 2012 exceeds 958 MW (whichever of these dates is earlier)

Tariff Pt 6: applies from 1 April 2014, or 2 months after total deployment since 1 April 2012 exceeds 1458 MW (whichever of these dates is earlier)

Tariff Pt 7: applies from 1 October 2014, or 2 months after total deployment since 1 April 2012 exceeds 2208 MW (whichever of these dates is earlier)

Tariff Pt 8: applies from 1 April 2015, or 2 months after total deployment since 1 April 2012 exceeds 3083 MW (whichever of these dates is earlier)

Consultation Questions: <i>Please support your response with arguments</i>	
6.	Do you agree with the <u>principles</u> of tariff degression described above, using baseline degression and a deployment-related contingent mechanism, supplemented with annual reviews to check that the system is working as planned?
7.	Do you agree that the baseline degression steps should be at the rate of 10% every 6 months?
8.	Do you agree that the contingent degression triggers should be based on 125% of expected deployment, and that actual deployment should be measured and published by Ofgem in the manner described?
9.	Do you consider that the baseline degression and/or the contingent deployment triggers should change once the 2 ROCs rate has been reached?
10.	Do you have views on whether deployment triggers should be divided into bands, and if so whether the bands described above are the appropriate ones?

Tariff Lifetime

31. At the start of the FITs scheme, tariffs were generally set to reflect the expected economic life of the installations that were supported, and to allow for tariffs to deliver a reasonable return over that economic life. As a result, PV tariffs had a 25-year lifetime while most other technologies were set at 20 years. As part of the current consultation we propose to consider whether this discrepancy remains appropriate. This is for a number of reasons:

- (a) technology lifetimes have been re-assessed as part of the revised analysis of costs, which has resulted in longer expected installation lifetimes for PV as well as hydro;
- (b) the time horizon of investors, however, does not necessarily match these technology lifetimes. Investors are likely to require tariffs that deliver their threshold return in much shorter time e.g. 10-15 years and are likely to be indifferent to longer term returns at the time of the investment. This potentially results in a deadweight subsidy for the later years;

(c) equalising the tariff lifetimes between technologies would allow for more transparent comparison of relative subsidy levels and, more importantly, transparent comparison between subsidy levels available between FITs and the Renewable Obligations (which is paid for 20 years).

32. We therefore propose that we should consider reducing the tariff lifetime for new PV entrants to the FITs scheme, from the date of implementation of Phase 2A, from 25 to 20 years. At any given tariff rate, a shorter tariff lifetime would reduce implicit rates of return, though not to a great extent. For example, we calculate that, other things being equal, the rate of return on a 4kW installation attracting a tariff of 15.7p would reduce from around 5.8% to around 5.2%.

Export tariffs

33. The payment of export tariffs is based on either metered or estimated quantities. At the start of the FITs scheme it was made clear that payment of export tariffs based on deemed or estimated values was an interim measure and that all FITs payments should where possible be made on the basis of accurately metered electricity flows. However, the cost of metering and registering small quantities of electricity in the electricity market systems makes this uneconomic at present at the smallest scale (up to 30 kW). This is expected to change with the rollout of smart meters, but not therefore in the immediate future. The amount of electricity that is deemed to be exported by different categories of accredited FITs installations with a total installed capacity of up to 30 kW that is not measured by export meters is determined annually by the Secretary of State. This is currently estimated to be 50% for small scale PV generators.

34. Measurement of net exports from a FITs generator's premises to the grid via the mandated smart electricity meter will be part of the functionality of the smart metering system, which will be rolled out across GB³. Once smart meters are installed and available at any particular site, it will no longer be necessary to deem exports from that site. As the roll-out of smart meters proceeds, we will ensure that this is reflected in the relevant regulatory arrangements.

35. The annual determinations by the Secretary of State also set the way that the costs of paying export tariffs are shared among supply licensees. Electricity suppliers are only compensated via the levelisation process to the extent that it has a net impact on their costs. For metered exports, we expect that the value that suppliers can extract from the electricity is equivalent to the price that they pay. The level of the tariff was set at the start of the scheme at 3p/kWh, which

³ For more information on the government's smart meters programme see http://www.decc.gov.uk/en/content/cms/tackling/smart_meters/smart_meters.aspx

was our estimate of the value to electricity suppliers of the electricity at the time. This is based on the wholesale value plus the value of avoided costs (such as transmission and distribution costs) less the transaction costs (such as metering).

36. As a result, suppliers have not been compensated for the value of paying the export tariffs. This position was confirmed for the 2011/12 FITs year by the Secretary of State's determination. The export tariff was increased by RPI to 3.1p, while the value of this electricity to suppliers was estimated in early 2011 to be in the range of 2.7–5.9p/kWh for metered electricity.
37. Unlike metered exports, electricity suppliers paying FITs do not benefit directly from the purchase of that deemed electricity by selling it on or offsetting other purchases. Suppliers are therefore compensated for the payment for deemed exports through the levelisation process. However, because these exports are spilled onto the electricity system, there is a benefit to all electricity suppliers through lower grid correction factors. This benefit is estimated as part of the levelisation process and reduces the total value of the payments included in the levelisation process. The value used to estimate this is the average price paid by the electricity system operator for generation that is not notified in advance ("the system sell price").
38. As part of this review we are seeking to establish whether the level of export tariffs continues to reflect the real value of FITs exports; and to consider the way in which export tariffs are treated in the levelisation process, in order to ensure that electricity suppliers are neither under-or over-compensated.
39. Preliminary analysis of the key data on which these estimates are based suggests that the underlying value of electricity either to suppliers or as spill is greater than the 3.1p/kWh implied by the current export tariff. If this increase is confirmed it may be passed through to an increase in the export tariff. This in turn will lead to a higher rate of return or to a proportionate reduction in generation tariffs in a way which would broadly maintain the rate of return.
40. At the start of the scheme it was foreshadowed that changes to export tariffs would apply to all generators. However, existing tariffs are based on the assumption of the current level of the export tariff. An increase to the export tariff could therefore potentially provide a windfall gain to existing generators, who would continue to receive the benefit of a high generation tariff. We therefore propose that any change to the level of export tariffs would apply only to new entrants to the FITs scheme.

Indexation of tariffs

41. Until now, FITs levels have been calculated on the basis of meeting a target **real** rate of return i.e. derived from economic modelling that estimates all future costs and benefits based on current prices, rather than estimating and allowing for future inflation in costs. They have also been based on the assumption that long-term investors target real returns and would not accept future returns that were progressively eroded by inflation.
42. This model may not however reflect the nature of investment in FITs technologies and actual investor behaviour. For example, FITs technologies are very capital intensive and the cost is heavily loaded towards the start of the project lifetime; PV in particular is largely a fit-and-forget technology with very high up-front costs and relatively low ongoing operational and maintenance costs.
43. The costs of these installations are either incurred upfront, or spread over the lifetime of the project via financing. If the installation is loan financed, the repayments of the loan will not increase over time, but will actually reduce in real terms with inflation.
44. There is also a risk that tariffs and rates of return that are quoted in real terms are under-valued by some consumers. For example a consumer may compare a 4% real return from FITs with a 4% nominal return available from a savings account or a bond.
45. Conversely, however, it is likely that some investors value highly the “insurance” offered by index-linking and real returns, and will accept lower rates of return for that guarantee. Examples include individual pension funds, which are likely to seek out low risk but inflation-hedged investments to cover long-term obligations. For this reason several financial arrangements are structured in this way.
46. We therefore seek views as part of the consultation process on whether it would be appropriate to move from real, (i.e. index linked) tariffs to nominal, (i.e. flat tariffs) for individual installations.
47. Recognising that the conclusion may be that maintaining some form of index-linking remains appropriate, we are also interested in views (as an alternative) about whether some kind of modification might be made to the way in which that index-linking is done. For instance, in view of recent moves in other schemes (e.g. pensions) from using the Retail Price Index (RPI) to using the Consumer Price Index (CPI) as a basis for calculations, one option might be to

make the same change in FITs. We may also wish to consider whether tariffs should be index-linked only for a certain number of years after accreditation.

48. Any such change would apply only to new entrants to the scheme and would not affect the entitlements to index-linking for existing generators already in receipt of FITs. It is also important to note that decisions on this issue are separate from any decision on regular changes to tariffs (i.e. annual inflation and/or degression) that apply at the time a generator joins the scheme.

Consultation Questions: <i>Please support your response with arguments</i>	
11.	Do you consider that we should reduce the tariff lifetime for new entrants to the FITs scheme, from 25 to 20 years?
12.	Do you consider that the current level of the export tariffs fairly represents the value to suppliers of exports from FITs generation? Please provide evidence to support your answer.
13.	Should any changes to export tariffs apply to all generators or only to new entrants to the scheme, and should there be compensating changes to generation tariffs?
14.	Do you think tariffs should be index-linked?
15.	If index-linking is maintained what would be the best model? (i) CPI for whole life, (ii) RPI for whole life, or (iii) index-linking (either RPI or CPI) for the first x number of years?

Annex A – List of Questions

Consultation Questions: <i>Please support your response with arguments</i>	
1.	Do you agree that in setting tariffs we should move away from explicitly targeting an average rate of return of 4.5-5%?
2.	Do you agree that the tariff table from 1 July should depend on the volume of deployment in the first two months of the post-3 March tariff tables?
3.	Do you agree that the ranges of tariffs displayed in Options A, B and C are broadly appropriate, and that the proposed deployment triggers for the choice between these options are the correct ones?
4.	Do you agree that tariffs for multiple installations (over 25 installations) should continue to be 80% of the relevant individual tariff, and do you have any cost information to support your response?
5.	Do you agree that installations that do not meet the energy efficiency requirement should attract the “stand alone rate”?
6.	Do you agree with the <u>principles</u> of tariff depression described above, using baseline depression and a deployment-related contingent mechanism, supplemented with annual reviews to check that the system is working as planned?
7.	Do you agree that the baseline depression steps should be at the rate of 10% every 6 months?
8.	Do you agree that the contingent depression triggers should be based on 125% of expected deployment, and that actual deployment should be measured and published by Ofgem in the manner described?
9.	Do you consider that the baseline depression and/or the contingent deployment triggers should change once the 2 ROCs rate has been reached?
10.	Do you have views on whether deployment triggers should be divided into bands, and if so whether the bands described above are the appropriate ones?
11.	Do you consider that we should reduce the tariff lifetime for new entrants to the FITs scheme, from 25 to 20 years?

12.	Do you consider that the current level of the export tariffs fairly represents the value to suppliers of exports from FITs generation? Please provide evidence to support your answer.
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