Title: Comprehensive Review Phase 2B - Consultation on Feed-in Tariffs for anaerobic digestion, wind, hydro and micro-CHP installations	**Impact Assessment (IA)**
	Date: 08/02/2011
IA No: DECC0077	**Stage:** Consultation
Lead department or agency: DECC	**Source of intervention:** Domestic
	Type of measure: Secondary legislation
Other departments or agencies:	**Contact for enquiries:** Lily Tang Lily.tang@decc.gsi.gov.uk

Summary: Intervention and Options

RPC: RPC Opinion Status

Cost of Preferred (or more likely) Option				
Total Net Present Value	**Business Net Present Value**	**Net cost to business per year** (EANCB in 2009 prices)	**In scope of One-In, One-Out?**	**Measure qualifies as**
£180m	-	-	No	In/Out/Zero Net Cost

What is the problem under consideration? Why is government intervention necessary?

Phase 2B of the FITs review seeks to update the evidence on technology costs and performance. Intervention is necessary to ensure that future tariff levels reflect the latest available information so as to minimise the risk of investors being overcompensated (i.e. receiving excess rents) for their investments, provides value for consumers and is achievable within DECC spending limits.

What are the policy objectives and the intended effects?

A key objective for Phase 2B of the review is to ensure that future tariff levels for installations reflect latest available evidence on the costs and performance of these technologies.
This will in turn reduce the risk of investors being overcompensated (i.e. receiving excess rents) for their investments and ensure that the scheme, which is funded by electricity consumers via their energy bills, remains affordable over the longer term.
The policy objectives are to encourage the uptake of small scale AD, wind, hydro and micro-CHP as part of the portfolio approach to meeting the 2020 renewables target. The intended effects are to enable householders and smaller scale investors to engage directly in the transition to a low carbon economy and to develop the supply chain. These need to be done in a way that is cost-effective and achievable within current spending limits.

What policy options have been considered, including any alternatives to regulation? Please justify preferred option (further details in Evidence Base)

The impacts of the 'Do Nothing' option (Option 1) are assessed in this Impact Assessment. This measures the costs of AD, wind, hydro and micro-CHP uptake under unchanged tariffs (i.e. tariffs as proposed when the scheme was launched in April 2010 and amended under the Fast Track review).

The Lead Option (Option 2) proposes a schedule of tariffs (for installations installing in October 2012), that take into account a set of rules to reflect value for money and other considerations (e.g. no tariffs, with the exception of micro-CHP, are proposed to increase from their current proposed levels; tariffs are capped at the 21p/kWh rate proposed for domestic solar PV from April 2012; and tariffs for the largest wind, hydro and AD bands will continue to align with proposed RO subsidy levels). Going forward, annual degression of tariffs for new installations is proposed at a rate of at least 5% per annum starting from April 2014, subject to a cost control mechanism that may trigger degression steps earlier.

The preferred option is the lead option (Option 2) which ensures that tariff levels reflect latest technology cost and performance data, provides a balance between incentivising deployment of FIT technologies whilst minimising the extent of any excess rents, and ensures that the scheme remains affordable over the longer term.

Will the policy be reviewed? It will be reviewed. **If applicable, set review date:** Month / Year

Does implementation go beyond minimum EU requirements?			**Yes**		
Are any of these organisations in scope? If Micros not exempted set out reason in Evidence Base.	**Micro Yes**	**< 20 Yes**	**Small Yes**	**Medium Yes**	**Large Yes**
What is the CO2 equivalent change in greenhouse gas emissions? (Million tonnes CO2 equivalent)			**Traded: -1.3mtonnes**	**Non-traded: -**	

I have read the Impact Assessment Date: 13/02/2012

Summary: Analysis & Evidence

Policy Option 2

Description: Lead Option (Option 2) – implement tariffs for installations installing from October 2012 according to a set of tariff-setting rules; and then 5% annual degression of tariffs for new installations from April 2014, subject to a cost control mechanism that may trigger degression steps earlier.

FULL ECONOMIC ASSESSMENT

Price Base Year 2010	PV Base Year 2010	Time Period Years 30	Net Benefit (Present Value (PV)) (£m)		
			Low: £100m	High: £240m	Best Estimate: £180m

COSTS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)	Total Cost (Present Value)
Low		£1m	**£15m**
High		£3m	**£50m**
Best Estimate		£2m	**£40m**

Description and scale of key monetised costs by 'main affected groups'

The monetised cost of this option is the value of EUA purchases in the UK power sector as a result of lower deployment under reduced tariffs for wind, hydro and AD under Option 2 compared with the Do Nothing. The high estimate is the cost estimate under low capex and opex, and is associated with the high NPV figure above; the low figure is associated with costs under high capex and opex assumptions, and relate to the low NPV estimate above.

Other key non-monetised costs by 'main affected groups'

This impact assessment doesn't include costs and benefits of micro-CHP due to data uncertainties. Any costs or benefits associated with balancing have not been included. Impacts on energy security have not been measured.

BENEFITS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)	Total Benefit (Present Value)
Low		£10m	**£110m**
High		£20m	**£280m**
Best Estimate		£15m	**£220m**

Description and scale of key monetised benefits by 'main affected groups'

The benefit of this option is lower resource costs associated with lower deployment of wind, hydro and AD under Option 2's reduced tariffs. The high estimate is the cost estimate under low capex and opex assumptions, and is associated with the high NPV figure above, the low figure is associated with benefits under high capex and opex assumptions, and relate to the low NPV estimate above.

Other key non-monetised benefits by 'main affected groups'

Lower deployment will avoid incurring some variable scheme administration costs. These have not been quantified.

Key assumptions/sensitivities/risks **Discount rate (%)** 3.5

Estimates of potential uptake and of corresponding costs/benefits rely heavily on a number of assumptions, including on capital and operating costs, technology performance characteristics, future electricity and carbon prices and investor behaviour. Projections will therefore be subject to a degree of uncertainty, especially given that FITs is a demand-led scheme.

BUSINESS ASSESSMENT (Option 1)

Direct impact on business (Equivalent Annual) £m:			In scope of OIOO?	Measure qualifies as
Costs:	Benefits:	Net:	No	In/Out/Zero Net Cost

A. Strategic overview

1. The Feed-in Tariffs (FITs) scheme was introduced in April 2010 to work alongside the Renewables Obligation (RO) and the Renewable Heat Incentive (RHI). The scheme is designed to promote take up of small-scale low-carbon electricity technologies by the public and communities. This is part of a portfolio approach to meeting the UK's renewable energy target that must be affordable in the context of the control framework for DECC levy-funded spending and provide value for money to consumers.

2. The Coalition Government has made clear its commitment to increasing the deployment of renewable energy across the UK in the sectors of electricity, heat and transport. Earlier this year, we published the UK Renewable Energy Roadmap, which set out our understanding of actual and potential deployment and the actions required to help the UK meet our target of 15% renewable energy by 2020 in a cost effective and sustainable way.

3. The emphasis on cost-effectiveness is crucial, particularly given the overriding need to ensure affordable energy for consumers. It is also vital that we ensure a responsible and efficient approach to the public subsidy programmes that support renewables, including the FITs scheme for small-scale low carbon electricity generation. That is why last year's Spending Review committed to improving the efficiency of the scheme.

4. The first comprehensive review of FITs, which was announced on 7 February 2011, has been looking at all aspects of the FITs scheme including understanding changes in technology costs; considering whether the original target rates of return remain appropriate; and ensuring that the FITs scheme is able to operate within the spending parameters confirmed by the Spending Review and Levy Control Framework[1].

5. The Phase 1 consultation document sought to clarify the aims of the FITs scheme in the context of our policy and strategy for renewables delivery since the FITs scheme started, including the Renewables Roadmap. The analysis underpinning the Renewables Roadmap is based on a benchmark that the marginal cost (in terms of subsidy) that is currently considered necessary to deliver the UK's renewable target is around 9p/kWh. This 9p/kWh level is broadly equivalent to two Renewables Obligation Certificates (ROCs) per megawatt hour based on 2012-13 values. This is the level of support available to offshore wind, which is currently considered to be the marginal cost effective technology required to deliver the UK's 15% renewable target. Any additional support for renewable energy technologies above this level therefore needs to be justified on other grounds.

6. The Phase 1 consultation document made clear that in the case of FITs, this justification is provided by the fact that the scheme's aims include contribution to wider low carbon goals including:

    - empowering people and giving them a direct stake in the transition to a low-carbon economy;
    - helping develop a supply chain that offers households a wide range of cost effective measures to lower their energy use and carbon emissions; and

[1] Further details on how the costs of the FITs scheme are managed via the Levy Control Framework can be found on the HMT website: http://hm-treasury.gov.uk/psr_controlframework_decc.htm

- assisting in public take-up of carbon reduction measures, particularly measures to improve the energy efficiency of buildings.

7. To ensure value for money to consumers, it is also important that the FITs scheme remains affordable. The parameters of affordability have been set for the current spending review period (2011/12 to 2014/15) by the Control Framework for DECC Levy-funded Spending (the 'Levy Control Framework').

8. Long-term value for money in delivering a low carbon economy also depends on continuing improvement in the costs of all technologies. The costs of renewable energy technologies are uncertain but are expected to fall over time as supply chains develop, technical challenges are overcome, and the cost of capital reduces with lower risk. It is important that the non-PV technologies supported under the FITs scheme are part of this trend; long term continued support can only be justified if they reduce costs, enabling technologies to mature so that over the medium to long-term they no longer need additional support to compete on a level playing field with other low carbon technologies.

9. This Phase 2B Consultation Stage Impact Assessment considers the costs and benefits associated with consultation proposals covering proposed tariff levels for AD, wind, hydro and micro-CHP as announced on 9th February 2012.

B. Problem under consideration

10. The evidence base that underpinned tariff-setting for non-PV technologies (AD, wind, hydro and micro-CHP) is now over two years old. Phase 2B of the FITs review seeks to update the evidence on technology costs and performance. Intervention is necessary to ensure that future tariff levels reflect the latest available information so as to minimise the risk of investors being overcompensated (i.e. receiving excess rents) for their investments.

C. Rationale for intervention

11. From its establishment in April 2010, the FITs scheme was intended to encourage deployment of additional small scale low carbon electricity generation, particularly by individuals, householders, organisations, businesses and communities who have not traditionally engaged in the electricity market. For these investors, delivering a mechanism which is easier to understand and more predictable than the Renewables Obligation, as well as delivering additional support required to incentivise smaller scale and more expensive technologies, were the main drivers behind the development of this policy.

12. A 'rate of return' approach to tariff-setting was considered to deliver the best overall balance between incentivising investment in a mix of technologies, fostering engagement at the household/community level and scheme cost-effectiveness. Providing a 5-8% rate of return on capital was estimated to lead to a significant increase in deployment of small scale low carbon generation.

13. Tariffs for solar PV, a proven and relatively risk-free technology, were set to provide an approximate 5% rate of return. Tariffs for AD (considered to be more risky and less established than solar) were set to provide a rate of return of around 8%. Wind and hydro tariffs aimed to yield a 5-8% return.

14. The evidence and data that informed the original scheme tariffs for non-PV technologies is now over two years old and Phase 2B of the comprehensive review therefore aims to ensure that target rates of return remain appropriate and that the extent of subsidy required to drive uptake reflects latest evidence on technology costs and performance.

15. In reviewing the assumptions that underpinned the original generation tariff levels, we commissioned consultants, Cambridge Economic Policy Associates (CEPA) and Parsons Brinkeroff (PB), to obtain latest evidence around technology cost and other assumptions as well as evidence on investor behaviour and required rates of return (i.e. 'hurdle' rates of return)[2].

16. The latest data on various technology characteristics, including on capital and operating costs and load factors, differs from the original data that informed tariff-setting for the launch of the scheme in April 2010. This suggests that tariffs need to be revisited to ensure that they are providing the appropriate level of support to drive uptake whilst minimising the extent of any overcompensation.

17. CEPA's evidence on hurdle rates suggests that a rate of return range of between 5% and 8% remains broadly appropriate for non-domestic investors (the key investor group for hydro, wind and AD). This is based on an assessment of what rates of return are currently available for alternative investment opportunities.

D. Objectives

18. A primary objective for Phase 2B of the comprehensive FITs review is to ensure that tariffs for AD, wind, hydro and micro-CHP reflect latest evidence on technology costs and performance, thus reducing overcompensation of investors and improving value for money for consumers, and that DECC is able to stay within the spending parameters set by the Levies Control Framework. The review also aims to drive cost reductions over the longer term to enable the 2020 renewables target to be achieved in a cost-effective manner.

E. Options under consideration

19. Options considered in this consultation stage Impact Assessment are:

(i) Option 1: Do Nothing – which considers leaving future tariff levels unchanged from their current proposed levels;

(ii) Option 2: Introduce new tariffs to apply from October 2012; plus automatic tariff degression of 5% per annum from April 2014, subject to a cost control mechanism whereby degression is potentially brought forward according to pre-defined capacity based triggers.

[2] The CEPA/PB report on updated assumptions on non-PV technologies (Updates to the Feed-in Tariffs model – documentation of changes made for non-PV technologies, February 2012) is published alongside this consultation stage IA. The CEPA/PB report setting out information on hurdle rates (Updates to the Feed-in Tariffs model - documentation of changes for solar PV consultation) is available at http://www.decc.gov.uk/assets/decc/11/consultation/fits-comp-review-p1/3365-updates-to-fits-model-doc.pdf

Option 1: Do Nothing

20. The Do Nothing option considers leaving future tariff levels unchanged from those proposed prior to scheme launch in April 2010 (see Table 1 below) and amended following the 2011 Fast Track review[3]. This option attempts to set out what would happen in the absence of a review and provides a benchmark against which Option 2 can be compared.

Option 2: Introduce new tariffs for AD, Wind, Hydro and Micro-CHP installations from October 2012

21. CEPA/PB's evidence on hurdle rates suggests that a 'target' rate of return range of between 5% and 8% (real, pre-tax[4]) remains broadly appropriate for non-domestic investors (the key investor group for hydro, wind and AD).

22. We therefore propose a set of tariffs that take into account the broad 5-8% rate of return range for installations installing in October 2012, but which meet the following set of criteria in order to ensure that value for money, affordability considerations and the objective for long term cost reductions are taken into account:

    i. No generation tariff (with the exception of micro-CHP) will increase beyond its current proposed level for 2012/13 (accounting for RPI index-linking of tariffs);

    ii. All tariffs need to reflect the need for fiscal restraint and cost-effectiveness – so no tariffs will exceed 21p/kWh (the new tariff level for solar installations up to 4kW from April 2012);

    iii. The existing transitions towards RO levels at the 5MW cross-over point between schemes will be retained. This affects the upper bands for hydro, wind and AD;

    iv. All technologies will be subject to a version of the cost control regime that is being put in place for solar PV – including annual automatic degression and capacity triggers.

23. We propose that the tariff changes should take effect from 1 October 2012 at the earliest. This is to reflect the generally longer lead times for non-PV technologies, and the relatively minimal impact of payments for these technologies on the FITs budget, compared with solar PV.

24. Further explanation of proposed new tariffs by technology type is provided below. It should be noted that outturn rates of return will vary from installation to installation and so in reality could fall above or below any 'target' rates of return.

AD

25. We are proposing to hold tariffs for farm-scale AD (i.e. for installations up to 500kW) at the levels introduced in the Fast Track review of FITs in June 2011, consistent with the constraint that no tariffs are increased from their current levels. They will however increase by RPI from 1 April 2012. This means that, based on latest

[3] New tariffs for AD installations up to 500kW were introduced as set out in the FITs Fast Track Review of 9th June 2011. The Do Nothing tariffs for AD up to 500kW therefore refer to these tariffs rather than those introduced prior to scheme launch.
[4] CEPA/PB, ibid

CEPA/PB data, these tariffs are expected to provide rates of return of less than 5% for installations up to 500kW. This compares with higher rates of return expected under the original scheme and can be explained primarily due to higher assumed operating costs such as for purpose grown crops to supplement agricultural waste feedstocks and lower assumed load factors for installations of this size. Assumed capital costs for installations up to 500kW have been reduced slightly to reflect recent industry data.

26. Under the proposed tariff of 9.0p/kWh (approximately 2 ROCs)500kW-5MW installations are expected to be able to achieve a rate of return up to 5%. Installations could potentially achieve a higher return if they are able to negotiate a higher price than the fixed export tariff for their exports. There is a high degree of uncertainty on all aspects of AD, including cost assumptions and load factors as well as non-financial drivers of uptake such as planning. Current tariff levels have led to 7 farm-scale (up to 500kW) installations currently claiming FITs[5] (with up to 100 projects potentially under development), suggesting that maintaining tariffs at current levels will continue to incentivise further uptake.

27. Given the need to ensure value for money, the high level of uncertainty as to what level of tariff would be 'sufficient' to drive uptake, and the extent to which non-financial drivers of uptake matter, we propose to take a cautious approach and hold tariffs at current levels for installations up to 500kW and to maintain consistency with the RO for installations larger than 500kW and up to 5MW.

28. There also continues to be debate around the use of crops as a feedstock for AD. Since the Fast Track review, DECC and Defra have worked with industry and environmental NGOs to compile and review the available evidence on the sustainability of crop feedstocks in AD. The evidence was considered in detail at a workshop in November 2011. This work suggests that, with the current policy framework and FIT rates, only a modest increase in the use of these crops is likely as agricultural based AD plants mainly utilise manure, slurry and residue feedstocks, co-digested with crops. However, concerns remain about the potential for localised impacts from, for example, diffuse pollution or habitat loss. Government aims to develop a voluntary code of practice with stakeholders to manage those risks.

29. The 9.0p/kWh tariff for 500kW-5MW installations is intended to match the level of subsidy provided to AD under the RO (i.e. 2 ROCs). Tariffs are reduced over time in line with the proposed new RO bandings i.e. falling to 1.9 ROCs from April 2015 and 1.8 ROCs from April 2016. This proposal will be revisited in light of the RO banding review Government Response.

Wind

30. Tariffs for wind have been re-based using updated CEPA/PB evidence on wind turbine costs and performance. Information on capital costs has been updated to reflect recent price data. Other adjustments have also been made, including changes to load factors and export fractions compared to the assumptions underpinning the 2010 tariffs.

31. Capital costs for <1.5kW building-mounted wind are significantly lower than in the previous version of the model, based on actual market prices for turbines of this type

[5] See Annex A for uptake under the scheme so far.

and size. Costs for larger installations are somewhat higher than the previous model, particularly for mid-sized projects, again reflecting actual market prices.

32. Operating costs for the <1.5kW and 1.5-15kW bands are lower than the previous assumptions on the basis that servicing may be less frequent and more likely to be based on the need to repair faults rather than a regular annual service. Operating costs for larger installations are in line with the previous model.

33. Load factors are generally somewhat higher than those in the previous model, based on modelling representative turbine power curves for the different wind speed bands, and on the view that projects will tend towards better sites with higher wind speeds.

34. The combination of changes to cost and performance assumptions acts to reduce the p/kWh levelised generation cost of wind installations.

35. Based on the CEPA/PB data, installations up to 100kW would require generation tariffs of between 22p/kWh and 28p/kWh in order to yield an approximate 8% rate of return for reference installations located at sites with a 6m/s wind-speed. Given the need for fiscal discipline and cost effectiveness, we propose capping these tariffs at 21p/kWh (the rate proposed for domestics scale solar PV from 1 April 2012). The capped 21p/kWh is still expected to provide an approximate 5% rate of return for well sited installations of up to 1.5kW in size and an approximate 5-8% return for 1.5-100kW installations, where the smallest installations are the least cost-efficient.

36. Tariffs for 100kW to 1.5MW wind installations are set to provide an approximate 8% rate of return for reference wind installations located at sites with an average 6m/s wind speed. This target rate of return, at the high end of the 5-8% hurdle rate range, can be justified because of the portfolio risks experienced by wind developers. We will aim to use information obtained from the consultation to ensure that installations are not over-subsidised.

37. The 4.5p/kWh tariff for 1.5-5MW wind is intended to match the level of subsidy provided to wind under the RO (i.e. 1 ROC). Tariffs are reduced over time in line with the proposed new RO bandings i.e. falling to 0.9 ROCs from April 2013.

38. It should be noted that CEPA/PB have also found evidence that some investors are considering aggregation of wind projects. Capital and operating costs for aggregators are assumed to be slightly lower than for individual installations, based on achieving economies of scale in purchasing and other project and operating costs. If this is the case, then all else being equal, aggregated projects would be expected to achieve higher rates of return than non-aggregated projects.

Hydro

39. Under the re-calibration of hydro costs, capital costs are slightly higher than those in the previous assumptions, reflecting industry reports of increases in raw material and project costs. Operating costs have also been revised upwards slightly based on evidence of upward pressure on costs for recent projects. Load factors are slightly higher than those in the previous model to reflect typical values for UK hydro sites, on the assumption that projects will tend to favour sites with reasonable load factors. Assumed technology lifetime has increased from 20 years to 25 years and

the amount of generated electricity assumed to be exported rather than used onsite has been reduced.

40. In broad terms, the increase in capital and operating costs act to increase the p/kWh levelised generation cost of hydro. But this is counteracted by the increase in assumed load factor, increase in technology lifetime and increase in bill savings resulting from greater assumed onsite use, which all act to reduce the p/kWh levelised generation cost of hydro installations.

41. Recalculation of tariffs using the revised estimates to provide an approximate 8% rate of return would result in a profile of tariffs that is very similar to the existing tariffs (with tariffs ranging from around 6p/kWh for 2-5MW hydro to around 23p/kWh for hydro up to 15kW, compared with expected 'Do Nothing' tariffs ranging from 4.9p to 22p). We therefore expect that holding tariffs unchanged for hydro (except for capping the smallest band at 21p and smoothing the largest band to 1 ROC i.e. 4.5p) will provide a 5-8% return for hydro installations. A possible exception is for 100kW-2MW hydro, where our analysis (under central cost and technology performance assumptions) suggests that a 10.1p/kWh tariff would yield an approximate 8% return, but where we are proposing to hold the tariff for that band fixed at the current expected rate of 12.1p/kWh. This is justified given the level of uncertainty for this technology, but we will use information obtained via the consultation to ensure that these installations are not over-subsidised. The recent RO consultation has highlighted the considerable debate regarding technology assumptions for hydro, particularly in regard to the expected load factors for installations that are expected to be made in the future.

42. It is proposed that tariffs for hydro installations in the range of 2–5 MW will taper towards RO levels and receive a tariff equivalent to 1 ROC/MWh i.e. 4.5p/kWh. Following the implementation of the RO banding review, we intend to maintain that equivalence. Banding review proposals for hydro within the RO are for 0.5 ROC/MWh from 2013/14. This suggests an adjustment to tariffs to approximately 2.3p/kWh for the highest capacity hydro band. While the aim is to keep FITs rates consistent with the RO rates, they are still subject to review.

43. It is therefore proposed **not to change tariffs for hydro, other than to apply the 21p cap and to maintain consistency with the RO**.

Micro-combined heat and power

44. Development of tariffs for this technology has been more difficult to assess than for the renewable technologies. DECC's policy view on micro-CHP is evolving as part of work on our heat strategy: we consider that it could play a useful part in a portfolio approach to supporting lower-carbon technologies, but (unlike heat pumps or district heating) is unlikely to be of major strategic importance in the long term. Specifically, micro-CHP may be a useful transitional alternative to gas boilers particularly in urban areas where there are significant barriers to heat pumps, and which are not yet covered by district heat.

45. At present the FITs scheme supports micro-CHP up to 2kW with a generation tariff of 10.5p/kWh (expected to be increased by RPI inflation to 11.0p/kWh under current i.e. Do Nothing tariffs) and is subject to a cap of 30,000 installations (as a pilot), introduced to minimise risk given uncertainties about how fast the industry would grow. At the end of December 2011 there over 400 installations either claiming FITs or on the MCS database (though industry representatives claim that more

installations have actually been sold). Industry claim that a 15p tariff would be needed to drive a significant increase in uptake. Given the relatively low uptake under the scheme so far (see Annex A), it is proposed to raise the support level by a modest amount to 12.5p (subject to the existing cap of 30,000 installations).

46. Given the high level of uncertainty on micro-CHP cost and performance characteristics (in particular there is significant uncertainty around fuel cell CHP as this is a new technology), it is difficult to specify what rate of return can be expected for a typical installation under a 12.5p tariff. However, we expect that the modest increase to the tariff rate will drive an increase in the rate of deployment.

47. We will keep the situation under close review as part of overall monitoring of uptake under FITs and also as our heat strategy evolves.

48. The Do Nothing and proposed new Option 2 tariffs are set out in Table 1 below.

Table 1: Option 1 (Do Nothing) and proposed Option 2 tariffs for October 2012 installations

		Tariffs for October 2012 installations, p/kWh, 2012 prices	
Technology	Tariff band (kW capacity)	**OPTION 1 Current tariffs*** (i.e. if no change to current policy)	**OPTION 2 Proposed new tariffs** from October 2012
Hydro	≤15 >15-≤100 >100-≤2000 >2000-≤5000	22.0 19.7 12.1 4.9	21.0 19.7 12.1 4.5
Wind	≤1.5 >1.5-≤15 >15-≤100 >100-≤500 >500-≤1500 >1500-≤5000	35.9 28.1 25.4 20.7 10.4 4.9	21.0 21.0 21.0 17.5 9.5 4.5
AD	≤250 >250-≤500 >500-≤5000	14.7 13.7 9.9	14.7 13.7 9.0
Micro-CHP	≤2 kW	11.0	12.5

*Current tariff levels are indicative only. Official tariff rates for 2012/13 will be calculated and published by Ofgem by 1 March 2012.

Installations are also entitled to receive the 3.1p export tariff (expressed in 2011/12 prices) for any electricity that they export to the grid.

Future tariffs and cost control

49. As announced at the launch of this review, ensuring that FITs spending stays within the LCF is a major priority for the comprehensive review. It is also important that the scheme delivers value for money in the longer term.

50. We propose that in order to emphasise the Government's commitment to cost-effectiveness and the overriding need to ensure affordable energy for consumers, there should be a general move towards cost reduction across the board. Long-term value for money in delivering a low carbon economy also depends on continuing improvement in the costs of all technologies. This is a theme that runs across the Renewables Roadmap, the RO banding Review, and the EMR. We are therefore proposing a cost-control model that can be applied flexibly across the board to all technologies. This includes a baseline rate of automatic degression going forward as well as capacity based triggers that may result in the acceleration of the degression timetable.

51. We propose that from April 2014, all tariffs will be subject to a minimum degression rate of 5% per year. They will also be considered as part of the cost control regime, which we propose should add a deployment-related benchmark. This sends a clear message that support for any technology above marginal costs is a transitional measure, albeit with different transition periods for different technologies.

52. The proposed cost-control framework also ensures that future changes in technology costs and other characteristics are reflected in tariffs as quickly and as transparently as possible.

53. Table 2 shows the trajectories for all of the proposed tariffs to the end of the policy lifetime of the FITs scheme, 2020/21. It should be noted that tariffs will be subject to regular review.

Table 2: Baseline tariff profile to 2020/21

		Generation tariff for new installations (p/kWh, 2012 prices)								
Technology	Tariff band (kW capacity)	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21
Hydro	≤15	21.0	21.0	20.0	19.0	18.0	17.1	16.2	15.4	14.7
	>15-≤100	19.7	19.7	18.7	17.7	16.8	16.0	15.2	14.4	13.7
	>100-≤2000	12.1	12.1	11.5	10.9	10.4	9.8	9.4	8.9	8.4
	>2000-≤5000	4.5	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
Wind	≤1.5	21.0	21.0	20.0	19.0	18.0	17.1	16.2	15.4	14.7
	>1.5-≤15	21.0	21.0	20.0	19.0	18.0	17.1	16.2	15.4	14.7
	>15-≤100	21.0	21.0	20.0	19.0	18.0	17.1	16.2	15.4	14.7
	>100-≤500	17.5	17.5	16.6	15.8	15.0	14.2	13.5	12.8	12.2
	>500-≤1500	9.5	9.5	9.0	8.6	8.1	8.1	8.1	8.1	8.1
	>1500-≤5000	4.5	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
AD	≤250	14.7	14.7	14.0	13.3	12.6	12.0	11.4	10.8	10.3
	>250-≤500	13.7	13.7	13.0	12.4	11.7	11.2	10.6	10.1	9.6
	>500-≤5000	9.0	9.0	9.0	8.6	8.1	8.1	8.1	8.1	8.1

54. In addition, consistent with the approach to cost control proposed for PV tariffs we propose capacity based triggers for each technology that will accelerate the degression steps. These will have longer notice periods than those proposed for PV (three months rather than two) and will be based on the best estimates available of

pipeline data. We are also proposing that the tariff changes would not apply to installations that have received preliminary accreditation.

55. We propose to consult on these triggers which are based on the expected deployment for each technology at the time of the scheduled step. Table 3 shows the proposed triggers. This means for example that the first degression step for all hydro tariffs would be implemented in April 2014, or 3 months after total hydro deployment reached 55 MW. Consistent with the approach to PV, it is not proposed to set these triggers beyond 2014/15. We do not propose to include micro-CHP in this framework because of the pilot nature of the programme, and the fact that the installation ceiling imposes sufficient cost control.

56. The use of capacity based triggers, in addition to base automatic annual degression, should lead to cost savings in comparison to a situation without any use of degression triggers (if uptake is higher than expected, but not under central uptake projections where triggers would not be hit earlier than expected). This will in turn help to ensure that the scheme is able to meet the parameters set by the Levy Control Framework.

Table 3: Proposed tariffs degression triggers for non-PV technologies 2013–2015

Technology	**Tariff band (kW)**	**Proposed Tariffs** (October for 2012 installations, April for future year installations), 2012 prices			
		2012	**2013**	**2014**	**2015**
Hydro	≤15	21.0	21.0	20.0	19.0
	>15-≤100	19.7	19.7	18.7	17.7
	>100-≤2000	12.1	12.1	11.5	10.9
	>2000-≤5000	4.5	2.3	2.3	2.3
Hydro trigger (MW)		**-**	**-**	**55**	**73**
Wind	≤1.5	21.0	21.0	20.0	19.0
	>1.5-≤15	21.0	21.0	20.0	19.0
	>15-≤100	21.0	21.0	20.0	19.0
	>100-≤500	17.5	17.5	16.6	15.8
	>500-≤1500	9.5	9.5	9.0	8.6
	>1500-≤5000	4.5	4.1	4.1	4.1
Wind trigger (MW)		**-**	**-**	**111**	**137**
AD	≤250	14.7	14.7	14.0	13.3
	>250-≤500	13.7	13.7	13.0	12.4
	>500-≤5000	9.0	9.0	9.0	8.6
AD trigger (MW)		**-**	**-**	**56**	**75**

Methodology

57. The original FITs model, updated using latest evidence on cost and other technology characteristics from CEPA/PB, has been used to provide estimates of uptake and costs for this Impact Assessment.

58. CEPA have re-calibrated the FITs model based on uptake under the scheme in the first year (2010/11). However, given that we are still part way through year 2 (2011/12) and that it is only possible to calibrate the FITs model to actual uptake

broadly across technology type rather than across every tariff band, we have also used actual uptake data from the Central FITs register and MCS database to ensure that our estimates reflect uptake to the end of December 2011 (see Annex A for actual uptake figures).

59. It should be noted that projections in this Impact Assessment cannot be directly compared with those made prior to the start of the scheme in 2010. This is because the model has both been re-calibrated and contains updated assumptions on technology costs and characteristics and investor hurdle rate ranges.

60. For modelling uptake, it is assumed that exported electricity in all tariff bands receive the fixed export tariff of 3.1p/kWh (in 2011/12 prices) except for the largest AD, wind and hydro tariff bands which are assumed to receive the wholesale price (approx 7p to 8p/kWh over 2011-2020). This assumption intends to reflect the fact that larger generators are more likely to be able to negotiate a higher price (than the export tariff) for their exports. Any further information that can be obtained from this consultation on the price that installations in each tariff band and across different technologies can negotiate for their exports would be useful for informing future projections of uptake and costs.

61. It should be noted that while tariff proposals are to apply from October 2012, modelling is undertaken on a financial year basis and so assumes that tariff changes apply from April 2012. This is expected to lead to a slight underestimation of uptake and costs of the scheme under Option 2. However, given that Option 2 tariffs, both for 2012 installations and onwards, are lower than under the Do Nothing, estimated uptake and costs are still expected to lie below Do Nothing uptake and costs.

62. All modelled uptake and cost figures reflect potential uptake of AD, wind and hydro installations up to 5MW in size, whether these take place under the FITs scheme or the RO scheme. This approach has been taken given the uncertainty as to whether future investors who choose to deploy at this scale will choose to do so under the FITs or the RO scheme. Given that FITs subsidy levels are intended to smooth to RO levels for MW-scale installations, it is expected that many investors at this scale may be indifferent between the two schemes (whilst FITs provides a more certain revenue stream, the RO has been operating for longer and so may be preferred by some investors).

Estimated costs and benefits (central scenario)

63. This section summarises the costs and benefits under our central assumptions. As explained in the section under Risks and Assumptions, there are a number of uncertainties related to some of our assumptions in particular around technology costs. Paragraphs 78-81 describe the sensitivities that we have undertaken on this.

64. Table 4 below sets out some key cost and benefit estimates under the central scenario for both the Do Nothing option and Option 2.

Table 4 – Key cost / benefit metrics

£m, 2010 prices, discounted to 2010	Option 1: Do-Nothing	Option 2: Proposed new tariffs	Option 2 relative to Option 1

Costs to consumers* in 2020	160	130	-30
Costs to consumers* cumulative to 2020	1,030	900	-130
Costs to consumers* - lifetime	2,850	2,330	-520
Resource costs in 2020	70	60	-10
Resource costs cumulative to 2020	450	395	-55
Resource costs - lifetime	1,200	990	-220
Value of carbon savings - lifetime	425	390	-40
Lifetime NPV	-780	-600	+180

*Subsidy costs are presented net of the value of export tariff payments.

Figures may not sum due to rounding.

Cost/benefit estimates exclude the impacts of micro-CHP due to the high level of uncertainty around all aspects of this technology including on capital costs, operating costs, load factors and technology lifetime. However, it is expected that costs/benefits associated with this technology will be relatively small compared with the total costs/benefits of the non-PV FIT technologies. Micro-CHP uptake does however need to be kept under review and the original scheme intention to review micro-CHP tariffs once 12,000 installations are installed will be retained.

65. Option 2 proposes lower tariffs than the Do Nothing. Therefore projected uptake is lower under this option – leading to lower associated subsidy and resource costs but also lower associated carbon saving benefits compared with the Do Nothing. Overall, Option 2 has a net present value cost of £600m compared with a net present value cost of £780m under the Do Nothing.

66. Tables 5 to 7 below set out projected uptake figures for Option 1 (Do Nothing) and Option 2. It should be noted that these figures do not include installations that have transferred from the RO to FITs at the 2 ROC subsidy level. Both the Do Nothing and Option 2 figures therefore underestimate uptake slightly by the same amount, but this does not affect the comparison of Option 2 against the Do Nothing. All figures have been rounded.

Table 5: Projected cumulative installations

		2011/12	2012/13	2013/14	2014/15	**2020/21**
Do-nothing	Hydro	190	280	380	490	1,380
	Wind	1,390	2,210	2,970	3,650	7,500
	AD	20	30	40	50	100
Option 2	Hydro	190	280	380	480	950
	Wind	1,410	1,840	2,260	2,650	4,250
	AD	20	30	40	50	100

Table 6: Projected cumulative MW capacity

		2011/12	2012/13	2013/14	2014/15	**2020/21**
Do-nothing	Hydro	25	40	55	75	215
	Wind	55	90	125	160	380
	AD	25	40	55	75	160
Option 2	Hydro	25	40	55	75	190
	Wind	55	85	110	140	300
	AD	25	40	55	75	160

Table 7: Projected GWh generation

		2011/12	2012/13	2013/14	2014/15	**2020/21**
Do-nothing	Hydro	80	120	170	220	655
	Wind	100	160	225	290	715
	AD	160	275	395	530	1,115
Option 2	Hydro	80	120	170	220	575
	Wind	100	155	210	260	590
	AD	160	275	395	530	1,105

67. Projected hydro installations, MW capacity and GWh are broadly (after rounding) the same over the spending review period (2011/12 - 2014/15) under the Do Nothing option and Option 2 given that Option 2 proposes to freeze tariffs (subject to a 21p cap on hydro up to 15kW). Uptake is however considerably lower by 2020/21 under Option 2 primarily due to Option 2 proposals to:

    - degress hydro tariffs by 5% per annum from April 2014, whereas the original scheme proposal did not propose to degress tariffs for hydro (given that hydro costs were expected to remain fairly flat over time);

    - provide 0.5ROCs (2.3p/kWh) to large hydro from 2013/14 onwards, whereas the Do Nothing option holds the tariff for that band at around 1 ROC (approximately 4.5p/kWh). This will be further considered in the light of the outcome of the banding review consultation.

68. Projected AD installations, MW capacity and GWh are also the same over the spending review period (2011/12 - 2014/15) for the Do Nothing option and Option 2 given that Option 2 proposes no change to tariffs over that period. Uptake by 2020/21 is marginally lower due to the proposed tariff reduction for large AD starting at 2 ROCs and then falling to 1.9 ROCs in 2015/16 and 1.8 ROCs from 2016/17.

69. Given that minimum hurdle rates in the FITs model are assumed to be 5%, and given that both the Do Nothing and Option 2 tariffs for installations up to 500kW are expected to give a lower than 5% rate of return for a reference installation, our modelling analysis shows that there would be no additional uptake of farm-scale (up to 500kW) AD over the period to 2020/21. It should be noted however that there is a high degree of uncertainty on all aspects of AD, including around cost assumptions and load factors as well as non-financial drivers of uptake such as planning. Given that current tariff levels have led to 7 farm-scale installations currently claiming FITs,

this suggests that maintaining tariffs at current levels could incentivise further uptake.

70. Projected wind installations, MW capacity and GWh are considerably lower under Option 2 than under the Do Nothing due to Option 2 tariffs being lower in 2012/13 and due to the tariff for the 1.5-5MW band dropping from 1 ROC to 0.9 ROCs from 2013/14 (compared with a constant 1 ROC under the Do Nothing).

71. Table 8 below sets out estimated impacts on domestic electricity bills under the Do Nothing and under the proposed Option 2.

Table 8: Domestic bill impacts

2010 prices, undiscounted	**Do-Nothing**	**Option 2**	**Option 2 relative to Option 1**
2011	£0.3	£0.3	£0
2015	£1.3	£1.2	-£0.1
2020	£2.2	£1.8	-£0.4
Average annual 2011-2015	£0.8	£0.7	£0
Average annual 2016-2020	£1.9	£1.6	-£0.3

Figures may not sum due to rounding

72. Given the relatively low projected level of subsidy costs associated with AD, wind and hydro uptake (e.g. compared with projected absolute costs of solar PV), the estimated bill impacts are also relatively low and are similar across the Do Nothing option and Option 2. Option 2 has slightly lower projected bill impacts due to a lower schedule of tariffs.

Wider considerations

AD

73. Proposed tariffs for installations up to 500kW lie above the 9p/kWh marginal cost-effective subsidy level (for meeting the renewables target) (though may be insufficient to provide a 5% rate of return). Key benefits of AD generation that may support a tariff level above 9p/kWh include:

- The joint Government and Industry AD Strategy and Action Plan committed us to increasing energy from waste through AD which is heavily dependent on FITs, particularly as AD developers are very sensitive to small price changes.

- There are significant holistic benefits to AD development in terms of avoided landfill and closed-loop on-farm energy solutions (with associated emissions reductions and benefits from improved management of manures and slurries).

Wind

74. Proposed tariffs for installations up to 1.5MW lie above the 9p/kWh marginal cost-effective subsidy level. Key benefits of wind generation that may support a tariff level above 9p/kWh include:

    - Community engagement - middle-sized wind turbines are ideal opportunities for community projects, enabling communities to self-generate and engage in the renewable energy agenda.

    - Long lead times – wind installations have the longest lead time of the technologies covered by FITs, with planning permission sometimes taking several years (and not all installations will succeed in obtaining planning permission so risk is also high). There is therefore a strong argument for taking a gradual approach to tariff reduction to minimise the impact on participants who have already incurred sunk costs.

    - Many investors in small scale wind are also investors in large scale wind – maintaining industry confidence by providing a measured reduction in tariffs is therefore important in our wider goals of meeting the renewables target. The proposed tariff reductions (of up to about 40%) also bring us considerably closer to 9p/kWh.

Hydro

75. Proposed tariffs for installations up to 2MW lie above the 9p/kWh marginal cost-effective subsidy level. Key benefits of hydro generation that may support a tariff level above 9p/kWh include:

    - Hydro generates with minimal intermittency and is therefore more likely (than some other renewable technologies) to be generating reliably at times of peak load.

    - Community engagement - the size of small scale installations together with the fact that hydro is a proven technology and generally considered to be reliable make this an attractive option for communities wishing to engage in renewable energy generation.

    - Long lead times mean that there is an argument for taking a gradual approach to tariff reduction to minimise impact on participants who have already incurred sunk costs.

Recommended (Lead) Option

76. Based on the above assessment of costs and benefits, Option 2 is the recommended option. This option includes a schedule of tariffs that aims to ensure continued support for AD, wind, hydro and micro-CHP installations whilst also having regard to cost-effectiveness, value for money and affordability over the longer term.

77. Option 2 is estimated to lead to a net present value cost of approximately £600m compared to £780m under the Do Nothing. Choosing Option 2 over Option 1 (the Do Nothing) is therefore estimated to lead to a lifetime present value benefit of £180m.

Risks and Assumptions

78. There are a number of assumptions that have been used that underpin the analysis of uptake and costs. These assumptions include technology costs and other technology performance characteristics, hurdle rates (based on evidence from CEPA/PB[6]), and projections of future energy prices (from DECC). Assumptions have also been made on the extent to which electricity generated by FITs installations are used onsite versus exported back to grid, and the price that generators may be able to secure for their exports. These assumptions impact on the potential rate of return that investors could receive and therefore also affect modelled uptake and costs.

79. One significant uncertainty is the level of costs of different technologies going forward. The analysis in Table 9 shows how total costs of the policy change and cumulative deployment varies as underlying cost assumptions vary. The high and low capex scenarios below are modelled using the growth rates derived from the FITs model under high and low assumptions for future capital and operating costs (from CEPA/PB cost projections).

Table 9 – Costs and Benefits under High and Low capex assumptions

Costs and Benefits under High cost assumptions			
£m, 2010 prices, discounted to 2010	**Do-Nothing High Capex**	**Option 2: High Capex**	**Option 2 relative to Option 1**
2020 deployment gwh (wind, hydro and AD)	340	260	-90
Resource costs – lifetime	275	165	-110
Value of carbon savings - lifetime	55	40	-15
Lifetime NPV	-220	-125	100
Costs and Benefits under Low cost assumptions			
	Do-Nothing Low Capex	**Option 2: Low Capex**	**Option 2 relative to Option 1**
2020 deployment gwh (wind, hydro and AD)	3,740	3,450	-290
Resource costs - lifetime	885	600	-280
Value of carbon savings - lifetime	620	570	-50
Lifetime NPV	-270	-30	240

*Subsidy costs are presented net of the value of export tariff payments.

Figures may not sum due to rounding.

[6] CEPA/PB, ibid

Cost/benefit estimates exclude the impacts of micro-CHP due to the high level of uncertainty around all aspects of this technology including on capital costs, operating costs, load factors and technology lifetime. However, it is expected that costs/benefits associated with this technology will be relatively small compared with the total costs/benefits of the non-PV FIT technologies. Micro-CHP uptake does however need to be kept under review and the original scheme intention to review micro-CHP tariffs once 12,000 installations are installed will be retained.

80. Table 9 above shows that under low capex there is higher deployment, higher resource costs and higher carbon saved than under the central option. The net cost under both the Do Nothing option and proposed Option 2 is lower than in the central case, as the increased cost due to higher deployment is outweighed by the lower cost of the generation itself. The impact of the proposed tariffs is greater under low capex assumptions – and the net present value (benefit) is greater than under central assumptions.

81. Under high capex assumptions there is much lower deployment than in the central case, and the net cost of generation under both the Do Nothing and Option 2 is lower than in the central case. The impact on deployment is much less under the high capex assumptions, and the difference in NPV under current proposals compared to no change is lower than under the central case.

82. Any data provided on these assumptions in response to the consultation will enable us to further refine our analysis. However, even if assumptions are robust and based on latest available evidence there will still be considerable uncertainty surrounding future renewables uptake, especially under a market-driven scheme. This means that projections of uptake and costs should not be viewed as firm predictions of the future. They are illustrations of what could happen under proposed tariffs and serve as a useful guide to inform the comparison of the cost-effectiveness of different tariff options.

Equality

83. The policy proposals have been screened for equality impacts. We consider that a decision on the options would not have a positive or negative effect on any particular protected characteristic. (or “equality strand”). We have therefore not undertaken a detailed Equality Impact Assessment.

Environmental Impacts

84. The proposed option, Option 2, is estimated to lead to just over 1 million tonnes less of CO2 savings (under the central scenario) than under the Do Nothing, leading to a lifetime cost of approximately £40m associated with need for the UK to purchase more EUAs.

Wider Environmental Impacts

85. There are wider potential environmental impacts associated with the development of these technologies. For example if maize is used as a purpose grown crop to support Anaerobic Digestion, it is a relatively poor crop for biodiversity, with evidence for reduced weed, invertebrate and farmland bird diversity compared with other crops. Maize is also an inherently risky crop for soil sediment and associated phosphorous loss to water due to soil structural damage associated with late harvest. These risks left unmanaged, could undermine our ability to increase the extent and quality of our water and priority habitats, which we committed to in the Natural Environment White Paper and the new Biodiversity Strategy for England.

Both of these commitments are aimed at allowing us to meet EU and global targets to halt biodiversity loss. This could also affect our ability to meet our commitments under the Water Framework Directive.

86. The code of practice currently being developed with the AD industry and other stakeholders will agree a set of management practices designed to deliver both environmental benefits and minimise or avoid the environmental risks associated with purpose grown crops supporting AD.

87. On hydro power, their construction can involve large infrastructure works and wide land use resulting in disturbance and siltation which can adversely affect the natural environment – biodiversity, hydrology, landscape etc. Poorly-designed or poorly-operated hydropower schemes *can* have deleterious effects on fish stocks, for example where fish are killed by turbines, prevented from moving up and down rivers (e.g. to access feeding/spawning grounds) affecting up and downstream composition of a range of aquatic wildlife, or where there are other undesirable effects on rivers themselves (e.g. on flow or sedimentation) which in turn adversely affect fish/river ecology.

88. Wind can have significant impacts on the aesthetic values of land and seascapes, particularly as the best location for the turbines is often in the uplands and on the coast which can be of high aesthetic value. There can also be some direct habitat loss and the possibility of collisions for some species of wildlife in certain situations.

89. To ensure environmental risks are mitigated and given that the overall aim of the FITs is to secure environmental benefit by reducing carbon emissions, it will remain that the deployment of renewable energy infrastructure continues to be subject to all relevant environmental legislation, controls, and aims to contribute to policy objectives to enhance the natural environment.

Social Impacts

90. There are no significant social impacts associated with Option 2 compared with the Do Nothing.

Sustainable Development

91. There are no significant sustainable development impacts associated with Option 2 compared with the Do Nothing.

Distributional Impacts

92. Option 2 is estimated to lead to lower impacts on domestic electricity bills as set out in Table 8 above.

Economic Impact

93. The proposed new tariff levels under Option 2 lead to lower estimated installation numbers compared with leaving tariffs unchanged. This is particularly the case for wind and hydro. However, there is insufficient data to estimate potential impacts on jobs both within these sectors and across the economy as a whole. Estimating job impacts as a result of the proposed policy change is inherently uncertain because estimates would rely heavily on factors such as how many installations will come forward (which is difficult to predict), installation times and how many associated supply chain jobs are created.

94. There may be a positive impact from lower electricity bills feeding through to the rest of the economy.

Micro business exemption

95. Since FITs does not count as regulation, the micro-business exemption does not apply.

Annex A

Table 1 below provides data on uptake under the FITs scheme so far alongside projected uptake of small scale wind, hydro, AD and micro-CHP made prior to scheme launch.

Table 1: Projected FITs Uptake Compared to Actual as at 31 December 2011

	Number			Capacity MW		
	Projected	**Actual FIT take-up**	**Pipeline**	**Projected**	**Actual FIT take-up**	**Pipeline**
Wind <50kW	3,095	1,260	341	25	13.5	2.5
Wind 50kW - <100kW	35	17	46	3	0.4	3.7
Wind 100kW+	139	19	25	104	15.7	24.5
Hydro <15kW	110	77		1	0.5	
Hydro15kW - <100kW	5	27		0	1.1	
Hydro100kW+	10	20	14	30	14.8	9.4
AD<500kW	16	7		4	2.7	
AD 500kW – 5MW	3	7	4	3	9	7.5
Micro CHP	8,250	315	129	8	0.3	0.1

NOTES

- Projections refer to estimates made prior to the scheme launching and are consistent with the February 2010 Government Response Impact Assessment.

- The projections are inclusive of estimates of RO uptake up to 5MW that would be expected to occur in the absence of the FITs scheme. This means that the 'actuals' figures in Table 1 cannot be directly compared against the projections without also incorporating actual uptake for RO up to 5MW. We know for example that 32 MW of sub-5MW wind installations joined the RO instead of FITs. Those 32MW are most likely to be in relation to 100kW+ installations and so need to be considered when comparing actual uptake against the projected 104MW. Comprehensive data on RO uptake split by the relevant FIT technologies and isolated to the below 5MW FITs capacity limit was not available at the time of preparing this Impact Assessment. Therefore a full comparison of actuals against projections cannot be made.

- Projections were produced on an annual financial year basis, so projected uptake to end December is calculated as 9/12 of annual uptake.

- RO transfers onto FIT (i.e. installations in place at the time of publication of the FITs scheme consultation on 15 July 2009 up to the 31 March 2010 before the launch of the scheme and which were transferred into the scheme from the RO) have been excluded.

- Pipeline data comprises installations on the MCS database but not yet on Ofgem's Central FIT Register, plus information from Ofgem on larger scale installations (>50kW) that are currently in the ROO-FIT accreditation process. Note that these accreditation applications are in process and may not all realize FITs support.