Consultation on Renewable Electricity Financial Incentives

BWEA response

BWEA welcomes this opportunity to comment on this important consultation. The Renewables Obligation is the key vehicle for delivering the vast amount of new renewable electricity capacity required to meet the Government's and the EU's renewable and carbon reduction targets. It is vital that it is fit for purpose, and we appreciate that the proposed changes are intended to see that it is, through strengthening the UK renewable electricity market. BWEA also welcomes the new microgeneration Feed-In Tariff to support distributed renewable generation technologies, of which small wind systems are an important part.

BWEA's membership consists of over 500 companies active in wind, wave and tidal stream energy. Our members are the companies that are investing today, and will invest in the future to deliver the large majority of the UK's required new renewable generation capacity.

BWEA generally supports both the RO and FIT Consultation proposals with only minor modifications. However, we neither agree with nor support the proposed "revenue stabilisation mechanism". We and our members strongly agree that the current market is working, it is adequate and that:

- A functioning renewable power market exists and is delivering new renewable capacity, thus stabilisation is not required and undermines that functioning market;
- There is no compelling evidence that stabilisation will increase deployment or lower the cost of capital;

- Stabilisation will retard development in the near term as lenders and developers will defer projects until the issue is settled;
- Such a radical change runs the very real and substantial risk of destroying investor confidence;
- The mere suggestion reaffirms the UK's reputation as Europe's least stable, highest risk, political and regulatory regime for renewables;
- It would essentially convert the RO into a very complex feed-in tariff, which is wholly inconsistent with the Government's recent and specific rejection of feed-in tariffs for large scale renewables;
- The practical obstacles to implementing such a system are enormous and would take time to settle, further delaying UK renewable deployment.

BWEA has a wide and deep membership that is at the core of delivering the low carbon economy. Whilst some of our members see an increasing issue with market price volatility in years to come, as wind and other variable renewables account for a larger share of capacity, we are united that the revenue stabilisation mechanism proposed is not needed at this time, is the wrong proposal, and any benefits it brings are outweighed by potential loss of confidence and delays to deployment. It should be put aside at this time, but the issue reviewed as the larger renewable and energy markets develop in coming years. BWEA would welcome early opportunities to engage with Government on such longer term issues, to examine what, if anything, may be needed.

Objections in principle

1. Fundamental Policy Reversal. It is critically important to emphasise that revenue stabilisation represents a fundamental reversal of established renewable policy by creating a complex quasi-feed in tariff. Such tariffs for large-scale renewables have previously been rejected by Government. It reverses the founding principle of the RO and UK power policy that renewables should participate in the market like any other generator, except for the additional support of the RO. This reversal is extremely damaging to investor confidence.

The consultation document asserts that smaller independent generators will want stabilisation as they cannot cope with power market risks. Feedback from our membership clearly indicates that this is not the case. BWEA members, both large and small, are effectively managing these risks. Contracts and power purchase agreements have been developed and are used to manage these risks. Further, it would appear difficult to justify removing responsibility for managing risks from market players who account for the substantial majority of UK renewable assets and who are managing those risks as a normal part of their ongoing business.

2. Unsubstantiated and Speculative Benefits. The Redpoint report on price stabilisation and other aspects of the consultation, commissioned by Government, asserts, without compelling evidence, that revenue stability will decrease cost of capital and increase large scale renewables deployment. This is at best unproven and at worst untrue.

In our discussions with BWEA members and lenders, the cost of capital is not determined by the support mechanism but other factors, such as bank borrowing costs and other financing terms. Financing costs in markets with more fixed-price support such as feed-in tariffs have been similar to those in the UK recently. Even Redpoint agrees that its analysis is "somewhat theoretical".

As to increased deployment, Redpoint's analysis suggests stabilisation would provide a 10% increase in capacity over the 'minimum change' scenario of extending the RO beyond 2027 and lifting the 20% cap. Redpoint offers no substantive evidence of how this conclusion was reached, or who they consulted. It appears to us to be mere academic theory or speculation, inconsistent with feedback from BWEA members who represent a large majority of all current renewables investment activity; not a basis on which to embark on a fundamental and almost certainly destabilising policy shift.

3. Substantial Risks: Reduced Deployment and Damage to Investor Confidence. The Redpoint report does not address negative impacts of stabilisation, which could wipe out any speculative benefit and could result in real harm – namely delays in deployment and loss of investor confidence. During the time it would take to implement stabilisation and set a pricing mechanism – a consultation and regulation process that could take several years – there is a real risk that developers severely curtail development until pricing levels are known, and that banks and equity investors will defer financing projects, creating a deployment lag. Thus stabilisation offers only speculative, unsubstantiated benefits over the proposed extension of the RO, and runs the very real risk of setting back renewable deployment in the UK. In fact, merely proposing this radical change has already created uncertainty, is eroding investor confidence and threatens to retard development until the issue is resolved.

Finally, interim delays to deployment could become permanent under a stabilisation regime. It the reference price or cap and collar is incorrectly set, there will either be no investment or generators will be potentially over-rewarded; the latter would lead to Government being blamed for giving precisely what this mechanism is trying to prevent.

4. Damage to or Loss of Functioning Power Price Hedging Markets. If hedging power prices is so advantageous, then it would be logical for financial institutions and utilities to enter that market and provide hedging services. In fact, this is the case. The Redpoint report does not truly reflect that there already is a fully functioning hedging system: the report alludes to it but then describes it as "opaque". BWEA members report a different situation, based on their intimate experience of the market.

Generators of renewable electricity have for quite some time been able to enter into power sales contracts for their renewables, ranging from short to long-terms. Prices can be floating or fixed. It is up to the market participant to select the balance of duration and fixed and floating prices that matches their risk appetite. Further, there is a lively CfD market for renewable power. Whilst the power CfD market only offers significant liquidity for 24-36 months forward, there are also longer term hedging options available to all generators, utilities and independents, using long-term natural gas derivatives, which are strongly correlated to power prices.

Thus, not only is stabilisation not required, but by instituting mandatory revenue stabilisation Government could end up destroying an existing and functioning market system that has tripled UK renewable energy capacity since the RO was implemented. Alternatively, Government could offer revenue stabilisation as a voluntary measure, an option BWEA has considered, but then it would be in competition with and undermine the existing market, which is not a satisfactory outcome.

Objections in Practice

Implementing price stabilisation will also have many practical obstacles, which we think would make it unworkable. Without in any way diminishing our fundamental opposition to price stabilisation, we call to your attention some of the very real obstacles to such a system.

1. Adminstrative and implementation issues. The Government would encounter the following administrative and implementation issues:

- There will be large cash flows to and from the agency administering the scheme – this will result in significant credit risks and treasury/banking costs for participants;
- If a monthly settlement cycle is chosen there will be large cash flows each month;
- If a project's revenue is out of line with the chosen index it may need to pay back money it doesn't have;
- There are issues with how customer tariffs would be calculated according to whether the mechanism operated in advance or retrospectively;
- The practicalities of tariff setting and communication thereof, plus meter reading, means it is unlikely that short term price spikes or troughs would result in customers having an immediate rebate or being asked to stump up more cash for the electricity already delivered;
- Suppliers will need to price in the risk of having to pay out via the scheme, which will likely result in an additional charge to the customer;

- There would be difficulties caused when customers move suppliers between one year and the next, i.e. the surplus/deficit may relate to a customer who is no longer within a suppliers' customer base and who cannot therefore be credited or debited.

There are a number of practical questions that would need to be addressed, which do not have clear answers:

- What is the reference price for power; nuclear, coal, gas, and in what proportion? Is it based on the marginal cost of old, amortised plant, or the operating costs and capital costs of new plant? What are the cost of capital assumptions for conventional generation? What is the cost of carbon, or of carbon capture and storage? What is the price of gas, or the price of oil to which gas prices are linked? What will UK power demand be? All of these and more must be taken into account.
- How will the price be indexed: RPI, CPI, other?
- Will it be changed over time?
- What will renewable cost assumptions be? Will it be based on average wind or low wind sites? If based on low wind sites, high wind sites will have a windfall benefit, which stabilisation seeks to avoid.
- How will currency fluctuations be taken into account? Most electrical, virtually all renewable, and most gas, coal and nuclear capital equipment is supplied by Euro- or Dollar-based manufacturers. The depreciation of Sterling against the Euro and the Dollar has increased capital costs for new UK generation. How will this be reflected over time?
- What are the rate of return assumptions that underlie the price?
- What impact will a large portion of power traded outside the wholesale power market under fixed contracts have on the wholesale power price? Will it distort pricing signals that may be needed to build other low carbon capacity such as CCS and nuclear?

2. Reliance on unique economic conditions. The case for revenue stabilisation appears to be driven by a reaction to a short-term spike in UK power prices driven by a unique confluence of unsustainable economic events, and a resulting perception that renewable generators gained an unearned windfall. We note that wholesale power prices have now dropped faster than they rose, down over 60% from recent peaks, eliminating the need for stabilisation.

There is a saying that bad cases make bad law. This would be case if stabilisation was based on 2007-2008 wholesale power prices. The 2007 and early 2008 price movements were the result of a "perfect storm" of commodity supercycle, rising power demand, unprecedented oil and gas speculation/futures trading, and unsustainable global economic growth rates. It also resulted in high prices for wind turbines, which made investment in new capacity difficult even though power prices were high. This is not a basis

for rushing through radical changes that will distort the market and introduce greater regulatory uncertainty in the UK.

Furthermore, the current RO regime has a mechanism to deal with excessive pricing – rebanding. Under current law the Government can adjust support for new projects of each technology. If there are sustained wholesale power price increases, there is a procedure to reduce ROC support for new generation. If there is a short-term spike in prices then Government should remember that it is just that: short term.

Some BWEA members have expressed concerns that, while opposed to the revenue stabilisation proposals in this consultation, they see a potential issue of power prices for wind becoming too low as a result of an extreme version of the phenomenon known as the 'merit order effect'. This effect, already observed in power markets with a high proportion of wind power in the mix, means that when wind is most available, the general wholesale price falls, reducing wind income. At the extreme, if wind is fulfilling all demand on the system at a point in time, then the market price could fall to zero or even go negative. While a CfD or cap-and-collar arrangement could protect against the risk of this scenario, we believe that it would be better addressed through reform of the power market generally, to ensure that all the new low-carbon generating capacity that will be needed can achieve the price stability required to underpin investment. We believe that this is best taken forward through the process that Government has already initiated through the call for evidence on 'Delivering secure low carbon electricity': the effect we describe will not become significant for some years and thus there is time for a considered response to the issue.

For all these reasons, we find the proposal for revenue stabilisation does not conform to our idea of good policy making and we request that it is withdrawn immediately.

The rest of this submission will respond directly to the question posed in the consultation document, since we do not have fundamental objections to any other proposal.

Renewables Obligation

Q1. Do you agree that, at this point, no extension beyond 2037 is required?

No. As this consultation is about implementing a clear policy to deliver the 2020 target, and that 20 years of support provides the best incentive to build and the lowest annual cost to consumers, it is prudent, logical and cost effective to have a 2040 end date. Without the 2040 date, third round offshore projects, which may not be operational until 2018-2020, will not receive the full support, and they will be critical to the 2020 target. We note that Redpoint has raised this issue and this is one of their solutions.

Q2. Do you agree that the criterion for treating projects under either the old 2027 end date or the new 2037 end date should be accreditation before or after 26 June 2008? If not, what should the criterion be and why?

Yes.

Q3. Do you agree that additional capacity or plant that is refurbished or replaced should be entitled to the full 20 years of support, regardless of when the original capacity started to receive support?

We are in favour of 20 years support for repowered wind projects. As wind technology has emerged in recent years, especially larger turbines, repowering costs are almost equivalent to new build costs (larger turbines need new foundations and roads, cost more, and usually need all-new cabling), so the support is justified. We cannot comment on other technologies, but it should be clear that repowering should be material and substantial to garner 20 more years of ROCs. For example, biomass plants often have boiler refurbishments, and these normal capital expenditures should not restart the 'ROC clock'. DECC should consult closely on a high standard of refurbishment to ensure the system is not abused. We would also welcome safeguards to protect against 'early' repowering to take unnecessary advantage of support, though for wind, having a ROC multiple that is suitable for new-build should be sufficient to ensure this does not happen.

We note that large on- and offshore wind projects may have peculiar repowering issues. These projects are often built in phases over several years with phases entering service at different times. We would suggest each identifiable phase, not the project itself, get the full 20 years of ROCs and each be considered separately for repowering eligibility. Additionally, such large, multi-phase projects could have early phases installed under one ROC multiple and later phases under a different one, although they are covered by a single contract and have the same costs – this is particularly true of the short-term increase in the ROC multiple addressed in Questions 23-26 below. BWEA would urge that the ROC multiple be set for such projects across all phases at the level that first phase qualifies for if the supply contract is signed up front for the entire project rather than there being separate contracts signed for each phase.

It should also be clarified that the 20 year clock starts ticking from the point of commissioning and generators have 20 complete years of eligibility: if eligibility were to be measured as 20 compliance periods, then the generator would get less than a full year in the compliance period in which it was commissioned.

Q4. Do you agree with the proposal to increase headroom to 10% by 2014?

Yes. BWEA suggested 10% headroom in previous consultations and we are pleased that Government is proposing this change. It is important to note that headroom is required to ensure sufficient ROC demand in the face of both supply variability (particularly from inter-annual wind variability) and demand variability. As we note below, differences between projected and outturn demand will impact on the recycle value that results at the end of process; there needs to be sufficient headroom in the calculations performed to set the Obligation to allow for both variabilities.

Q5. Do you agree that the proposed series of 0.5% annual increases in headroom over the time period set out is the best approach to implementing any increase?

If 10% is deemed to be an appropriate level of headroom to give confidence to the market, we fail to see why it should not be implemented immediately.

Q6. Do you agree a wholesale price stabilisation mechanism would bring benefits to renewable generators by providing a predictable and adequate level of compensation?

As noted in the introduction, our members do not believe that a stabilisation mechanism will reduce the industry cost of capital or result in any additional build of renewable generating capacity. On the contrary, they believe that such changes could cause a reduction in new capacity additions and presents serious risks to investor confidence. We and our members strongly agree that:

- A functioning renewable power market exists and is delivering new renewable capacity, thus stabilisation is not required and undermines that functioning market;
- There is no compelling evidence that stabilisation will increase deployment or lower the cost of capital;
- Stabilisation will retard development in the near term as lenders and developers will defer projects until the issue is settled;
- Such a radical change runs the very real and substantial risk of destroying investor confidence;
- The mere suggestion reaffirms the UK's reputation as Europe's least stable, highest risk, political and regulatory regime for renewables;
- It would essentially convert the RO into a very complex feed-in tariff, which is wholly inconsistent with the Government's recent and specific rejection of feed-in tariffs for large scale renewables;

- The practical obstacles to implementing such a system are enormous and would take time to settle, further delaying UK renewable deployment.

Q7. Do you believe that these benefits can be realised in practice? In particular, during periods of high fossil fuel prices, would suppliers pass the benefits on to consumers?

No. We note that there is no evidence presented by Redpoint to demonstrate that such a mechanism would lower the cost of capital. There are many ways in which investors compute returns, however the best measure of risk is the margin above LIBOR that banks charge for renewable energy projects – the lending margin reflects the risk. Based on discussions with members who have projects in other jurisdictions, we believe the lending margins in the UK are not materially different from the lending margins in feed-in tariff jurisdictions, In fact, there have been times in the last three years where UK lending margins have been lower than those in feed-in tariff jurisdictions, thus showing that the cost of capital is not tied to the regulatory system.

Q8. Do you agree that a revenue stabilisation mechanism could help us meet our target by encouraging more deployment?

No. As noted, we strongly disagree with this mechanism. There is no evidence that it will increase deployment or reduce the cost of capital. The Redpoint study makes no assessment of impact on investor confidence. The uncertainty in the short term whilst the issue is decided threatens to delay projects. There is a real and substantial risk that such a programme will reduce and retard deployment and firmly establish the UK as the least stable regulatory regime in Europe.

Q9. What would be the best choice of wholesale power price index to adopt for use with any stabilisation mechanism and why?

Alongside the objections to this proposal in principle, we also find that the practical issues with implementing a revenue stabilisation system would be very large. The choice of index against which to mark the mechanism is but one of these. It is entirely possible that several indices might be necessary, for instance the price that wind power sees is less than the average price as when the wind blows, wholesale prices are lower – will a 'windy' index be required? What index is right for dispatchable renewables? We believe that the issues are of such complexity that choosing the 'right' index or indices would be difficult verging on impossible.

Q10. What impact do you think a stabilisation mechanism would have upon the operation of the wholesale electricity market?

The effective removal of perhaps 20% of generators from the power market will limit competition and have unpredictable effects on other players' behaviour. We believe that there will be issues in the future around the price of power for wind in particular as wholesale prices will be lower for wind than the average, but it is also true that other low-carbon generation options would benefit from greater stability in prices and mechanisms that allow

long-term contracts at predictable prices to be signed. This points to an overhaul of the power market to make it fit for purpose to deliver a decarbonised mix; we recommend that Government takes this forward through the process started with the recent call for evidence on security of supply.

Q11. Do you envisage any other implementation challenges which might result from the introduction of a stabilisation mechanism? If so, how do you propose we deal with them?

We propose that Government deals with these challenges by not taking them on.

Q12. Do you agree that this approach will minimise undesirable effects on market confidence whilst we consider the introduction of revenue stabilisation? If not, what further steps could we take to maintain confidence in the market?

The best way to maintain confidence in the market is by not introducing the revenue stabilisation mechanism.

Q13. Do you agree that a Contract for Difference option would be the best choice of wholesale price stabilisation mechanism? If not, what would you recommend as the best option and why?

We do not believe that price stabilisation is necessary, whatever mechanism is chosen.

Q14. Do you have any initial views on whether a stabilisation mechanism should remove wholesale price risk from generators altogether or leave them with some degree of risk, via a "cap and collar" mechanism?

Risk is best managed by generators using tools of their own choosing, not mandated by Government, since one size does not fit all.

Q15. Do you have any initial views on whether a stabilisation mechanism after 1 April 2013 should be optional or mandatory for generators under the RO?

If a stabilisation mechanism were to be introduced, it would be better if it were optional rather than mandatory, but as we noted in the introduction this would then put the Government system into competition against existing commercial offerings. Also, if voluntary, the considerable legislative and start-up effort may be for the benefit of only a few participants, making the system bad value for money. Therefore we do not believe this system should be either mandatory or voluntary.

Q16. Do you agree that biomass and generation involving co-firing should be excluded from any new stabilisation mechanism? If not, why not?

Yes. Given the dispatchable nature of co-fired and pure biomass power, generators using these resources will be able to choose if and when they produce electricity. Therefore they have less need for such a mechanism. In addition, were Government to ignore our advice and introduce such a system, we believe that in order to minimise distortion in the wider power

market any stabilisation mechanism should be as limited in scope as possible, and therefore the more exclusions from the system the better.

Q17. Considering the balance between the benefits and the implementation challenges, do you think we should introduce a wholesale price revenue stabilisation mechanism?

No.

Q18. If you believe that a price stabilisation mechanism should be introduced for the wholesale power price, do you think that it should be applied to the ROC price as well?

BWEA is not convinced that the cost and complexity of such an additional system would be good value when the introduction of headroom will already reduce ROC price volatility to within a narrow band.

Q19. Do you agree with the proposed conditions? Are there any more conditions we should consider?

At present BWEA strongly prefers to limit ROCs for non UK projects to generators with an *exclusive* connection to the UK. There are considerable regulatory issues that need to be resolved for generators that are linked to two or more countries in a 'supergrid' – which BWEA strongly supports. However, these will take more time to resolve than there is available before April 2010, if Government is intent on introducing such an option by that time. Government should be pursuing solutions to these regulatory issues with our European partners as a high priority in order to allow the benefits of large-scale interconnection to be captured earlier rather than later.

When these regulatory issues are addressed, then conditions such as reciprocity may be necessary, whereby if a generator in, say, German waters can benefit from the RO, then generators in UK waters should be able to access the German feed-in tariff. There will also need to be strong protection against 'double dipping'. In general we would say that if UK consumers are to pay for infrastructure and jobs in other countries, then those other countries should be helping pay for ours through fair trade in renewable power.

Of the conditions listed by Government in the consultation, how 'genuine cost savings to the UK' can be determined would appear to be very difficult. Otherwise the list looks reasonable.

Q20. Do you think we should set support levels for stations located outside the UK in line with those for UK-based generation?

Yes, as long as the transmission charges paid by such generators are cost-reflective or such generators pay the full capital cost of their connection.

Q21. Do you agree with our proposal to limit the eligibility for stations located outside the UK to those with a direct interconnection to the UK? If not, why?

As noted above, BWEA believes such eligibility be limited to those generators with a direct *and exclusive* connection to the UK.

Q22. Are there any other specific issues we should consider when implementing international trading in renewable electricity through the RO?

Government needs to resolve whether the direct and exclusive links from generators outside the UK are regulated or not. Were such links to fall outside the OFTO regime, on the basis that the projects are outside the Renewable Energy Zone, they would be treated as unregulated interconnections right through to the UK shore and connection to the onshore transmission network. This also implies metering at the onshore connection point. However, as unregulated connections, National Grid cannot treat the power that emerges from such links as renewable, which introduces risks for the developers of these non-UK projects. Having links regulated as OFTOs brings its own issues, such as how to manage the portion of the link outside UK waters. BWEA is currently agnostic on whether links should be regulated or not, though some members' legal advice appears to indicate that the OFTO regime is required; however, there are issues with either choice that will need action to resolve before projects can be built.

Q23. Do you have any comments on the Ernst & Young report on the current capital and operating costs for offshore wind projects? Is there any other evidence which we should take into account? If so, please provide details.

The evidence gathered by Garrad Hassan for BWEA in the report 'Charting the Right Course'[1] indicates that Ernst & Young's assessment of the current and near-term capital cost of offshore wind is correct.

Q24. Do you agree with our proposed level of support for offshore wind, including our proposal to step down support from 2 ROCs/MWh to 1.75 ROCs/MWh over 2 years?

The Garrad Hassan analysis looked further ahead than the Ernst & Young report, and concluded that while cost reductions were likely as long as confidence to invest among supply chain players is high, capital costs may still be above the level that makes projects viable at 1.5ROC/MWh in two years' time. Consequently, while we believe that the principles behind the proposal are sound and support it, this should be qualified by a short review in October 2010 as to whether the step down to 1.5ROC/MWh should be delayed by a further year, in a similar vein to the review proposal by the Renewables Advisory Board.

Q25. Do you agree the proposed eligibility criteria and cut-off date for offshore wind are appropriate?

BWEA can see merit in both the Government proposal based around entering into contracts and the alternative proposed by RAB for eligibility based on RO accreditation by Ofgem. BWEA members have divergent views on these criteria which have made reaching a consensus on either option difficult. At this time BWEA is agnostic on this choice and will leave individual members to argue for their preference in their own submissions to this consultation.

[1] http://www.bwea.com/pdf/publications/ChartingtheRightCourse.pdf

If the Government proposal is ultimately adopted, then we suggest that Government retains the discretion to judge exceptional cases where the delivery of a foundation has not been achieved by the due date, but the earlier deadline for contract placement has been met. The second qualification milestone ('foundation' milestone) is a physical milestone that is vulnerable to weather, technical or HSE risks outside the control of the developer. These risks are significant. For example, weather delays of two months are not unknown and cannot be mitigated contractually, as weather delay risk is taken by the developer. Even where available, any contractual damages for force majeure issues could never compensate for the loss of the 2ROC/MWh rate.

One way to mitigate these issues with respect to the 'foundation' milestone is to change the milestone from physical to contractual. This could take the form of presentation to DECC of a signed contract showing both foundation delivery and an installation contract scheduled to commence before the 'foundation' milestone date. The contract will commit the developer to the financial liability of marine installation. To prevent gaming of this modified milestone, a drop-dead date reflecting accommodation of the above-identified risks should be included, such as a completed single foundation installation by the end of Q1 2012 (for the 2ROC/MWh rate) or execution of the Crown Estate lease option (and therefore starting to pay production rent), should also be included. Although this adds complexity to the current scheme, it better reflects contractual commitment to build while accommodating risk factors inherent in the offshore industry which the original proposal inadvertently includes.

Q26. Do you think the differential in ROC support between projects that signed just before the 2009 Budget announcement in the existing regime and projects which could become eligible for 2 ROCs will create an unfair advantage? If so, please provide evidence.

BWEA is taking no view on this issue and will leave individual members to supply evidence either way.

Q27. Do you agree that we should not impose a restriction on the use of tallow in the RO until clarity of the new marketplace has been established?

BWEA has no opinion on this matter.

Q28. Do you consider the cap be retained at 12.5% going forward?

Yes.

Q29. If you think the cap should be changed, when should this happen and at what level should the cap be set? Please provide evidence supporting your answer.

BWEA believes the cap should remain unchanged.

Q30. Do you have a view on how we should predict expected electricity use in a subsequent obligation period? What are the advantages/disadvantages of any suggested methods of predicting expected electricity use?

Predicting electricity use is difficult and BWEA has no expertise on the subject with which to advise Government on the method to be used. We would note, however, that errors in such predictions could have significant impact on the ROC market, and if care is not taken then, at the extreme, the risk of ROC supply exceeding demand could be increased.

In advance of headroom being invoked, the prediction of electricity demand will not set the total Obligation level – this will be calculated after the end of the compliance period as now, once demand is reported to Ofgem by suppliers. The prediction will be used, however, to assess whether headroom should be invoked. If this prediction is higher than the final outturn demand, there is a risk that headroom is not invoked when it should have been. To explain: say demand is forecast at 100 units, the fixed percentage for the coming year is 11.4% and the ROC supply forecast is for 10 units – in this case headroom is not invoked as under headroom the level needed would be 11; in the event, demand is actually 95 units, and thus the Obligation level is for 10.8 units (95 x 0.114) – less than the 11 required with 10% headroom. If in this situation there is greater ROC supply than forecast due to greater availability of wind and/or hydro, then the risk of ROC oversupply is high.

When headroom has been invoked, error in predicting demand can also have a significant impact. Say that ahead of a compliance period demand is again forecast at 100 and ROC supply at 10; under 10% headroom the Obligation is thus set at 11ROC/100MWh. If actual demand again turns out to be 95, suppliers will need only (95 x 0.11) = 10.45 units – a headroom of only 4.5% against the ROC forecast.

These simple examples are quite extreme in that it is unlikely that demand predictions will be so far from the outturn – though it should be noted that demand in 2009 is in the order of 5% less than in 2008 and it would have been difficult to predict such a rapid decline. Nevertheless, these examples illustrate that both before and after the invocation of headroom, over-prediction of electricity demand increases the risk of ROC supply exceeding demand. This counter-intuitive result is important, in that it indicates that Government should choose a prediction method that has a bias towards underestimating demand in the coming compliance period.

Q31. Do you have a view on how we should predict the expected level of ROCs generated from existing generating stations in a subsequent obligation period? What are the advantages/disadvantages of any suggested method?

For wind generators, plant operating at the start of the compliance period should be requested to report their ‘P50’ output, i.e. the output level for which there is an even chance of either exceeding or undershooting in any given year. For generators with an extensive enough history, this can be checked against historic output. For smaller wind generators this may be a quite onerous requirement, so perhaps regional load factors might be applied for generators below a certain size.

Q32. Do you agree with our proposal for accounting for banked ROCs?

Yes, though it should be borne in mind that banking will perform a vital smoothing function between high and low ROC generation years.

Q33. Do you agree with our proposal for predicting new generation capacity for the subsequent obligation period? What are the advantages/ disadvantages of this method of predicting this new capacity?

Yes. It should be noted that numbers of ROCs generated by new plant will be heavily affected by when in the year they are commissioned, particularly due to the seasonality of wind. An element of self-prediction by generators would appear useful – perhaps at the time of RO accreditation, there should be a requirement to predict first year generation.

Q34. Do you agree that the proposal to offset redeemed ROCs against a generator's future output presents a proportionate approach?

Yes.

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BWEA response: Feed-in Tariffs

BWEA acknowledges that there is a balance between encouraging technology uptake, supporting progress towards meeting national renewable energy targets, and the overall cost of the scheme. However, we strongly urge DECC to take a fuller view of the industrial value added benefits of the scheme's deliverables, with particular focus given to the UK small wind sector.

With the best wind resource in Europe, we propose that wind products of all scales can deliver cost effective means of meeting the identified FIT scheme's objectives. However, at the smallest scale of generation the UK possesses a world leading wind manufacturing base, supported by a relatively developed upstream supply chain framework. Small wind is the only microgeneration technology in which the UK holds global leadership, and this provides the UK FIT scheme with a rare opportunity to secure an array of industrial added value benefits.

Unlike most renewable technologies covered by the FIT scheme, the vast majority of small wind systems deployed within the UK are manufactured in the UK, and will channel FIT scheme funding to production plants, supply chains, and centres of commerce based in the UK, rather than abroad. The industrial value added benefit of this could be significant if the UK FIT scheme can help support the UK small wind industry to maintain global leadership and deliver a dominant position in fast-expanding international markets for decades to come. The delivery of a mature and leading UK small wind industry would provide economic and employment benefit to the UK as a whole.

BWEA believes that a successful UK small wind sector could deliver the deployment of 600,000 units by 2020 and 4m in the medium to long term. With a strong home market (which currently represents ~20-25% of global

demand), UK small wind firms can build on their current status as the world's largest exporting industry and deliver annual revenues of over £750 million by the end of the next decade. Not only are there environmental and economic benefits to be secured, but a UK small wind industry that fulfils it potential could provide over 10,000 UK based jobs.

UK small wind system sector – Stats and facts

- **UK is the world's second biggest market for small scale wind** (<100kW) (2008);
- The UK market accounts for **20-25% of global demand** for small scale wind products;
- UK manufacturers hold an **82% revenue share** of their home market;
- There are currently **over 18 UK manufacturers** of small wind systems;
- The UK is the home of approximately half of the world's top 10 small wind manufacturers, including the world's second largest;
- By the end of 2008, the sector provided approximately 2,000 UK based jobs, creating **500 new jobs in 2008 alone**;
- The UK has the best wind resource in Europe;
- In 2008 the **UK became the world's largest exporter of small wind systems**;
- Export revenue for UK manufacturers doubled in 2008;
- **UK manufacturers export 50% of their production, to over 100 countries.**

Figure 1: UK small wind system sector – Stats and Facts

Key to optimising UK small wind industrial potential will be the creation of a high-volume indigenous market. With regard to small scale generation, we support DECC's aspiration to incentivise technology cost reduction through stimulating higher rates of uptake, and subsequent increased volume of deployment. But we would recommend that the ability of the UK FIT scheme to deliver such cost reduction will vary specific to each technology, and the related global context. Given the importance of the UK in the global small wind market, actions here can have a significant impact on global technology costs, whereas for other technologies, costs will be determined by the actions of other countries with much bigger markets.

BWEA looks forward to discussing the content of this consultation response with DECC in more detail in the coming weeks.

Q35. Do you agree that FITs should be structured in order to recognise all generation, rather than just exports?

Yes. BWEA recognises the advantages of the generation tariff approach, as stated in our response to the Renewable Energy Strategy consultation in September 2008. We continue to support its logic, and note that a financial support mechanism that incentivises onsite generation holds a number of benefits over a pure export model (as adopted in Germany, for example).

Q36. Do you agree that the best way of delivering security for the investor is to set a long-term guaranteed price for exports?

For the scheme to meet the objective of encouraging increased levels of generation deployment, both in the immediate and longer term, the delivery of security for the investor must be a deliverable of the entire scheme, of which the export tariff is but an important part.

BWEA recommends the export tariff should possess a fixed minimum value, and that this value is indexed to the RPI.

BWEA notes statements made during the consultation period that suggest the export tariff will not be index linked. In such a scenario, BWEA cannot agree with the provision of a one-off choice between receiving a fixed export tariff, and participating within the open market (as stated in paragraph 3.18 of the consultation document). DECC needs to be careful that those generators adopting the fixed export tariff are not subsequently locked into receiving a tariff that over time begins to underestimate the value of exported electricity compared to prevailing market rates.

In the absence of an RPI-linked export tariff, **BWEA recommends the FIT scheme utilises a fixed minimum export tariff, regulated within the natural cycle of the FIT scheme, which does not preclude customers from selecting supplier export tariffs in excess of the stated minimum, should suppliers wish to offer them.**

Additionally, BWEA recommends that DECC, in order to provide added investor certainty, clarify that in the case of a review of the export tariff, its level can only be revised upwards.

We note that the current review of DNUoS charging methodology may have the shorter term result of generators connected at 22kV and under (which would cover the vast majority of FIT generators) having negative DNUoS charges, i.e. being paid to put electricity onto the distribution network. As the amount of distributed generation rises, however, the sign of these charges will change and generators will start to pay DNUoS. Generators will have the choice of being exposed to this variability if they choose not to take the regulated export tariff. We would recommend that if the fixed rate is chosen, then the supplier taking the power receive or pay the DNUoS as appropriate: in the shorter term, this should be an incentive for suppliers to sign up FIT generators, which would be a welcome early boost to the system.

Lastly, BWEA notes that the proposed export tariff of 5p/kWh is less than payment currently offered by some suppliers to many existing installations (pre 15 July 2009). This point is of acute significance to those installations that are proposed by DECC to be grandfathered into the scheme on a generation tariff equivalent to existing ROC income. The consequence of this will lead to many existing installations becoming “worse off” as a result of their obligated absorption into the FIT.

There is no certainty, nor guarantee, that all suppliers will continue to offer export tariffs at a rate higher than the proposed scheme minimum (as is

currently the case), especially when the opportunity to collect the tradable ROCs has diminished.

BWEA recommends that all existing installations be provided with grandfathered rights to the "high" generation tariff levels, as if they were being installed as new post 15 July 2009 (see response to Q64).

Q37. Do you agree that FITs generators should also benefit from on-site use of their generation?

Yes. BWEA recognises the advantages of the generation tariff approach as stated in its response to the Renewable Energy Strategy consultation in September 2008 (see response to Q35).

BWEA supports the application of a generation tariff on the basis that the overall level of financial reward be at a level sufficient to incentivise technological uptake at appropriate sites. The overall level of financial reward needs to be calculated from the generation tariff, the import/export ratio of a standard site, the value of the exported electricity, and the value of imported electricity displaced by the generator at a standard site.

Q38. Do you have any other views on the basic structure of the FITs?

Registration must be simple, easy, quick, specific to the type and scale of generation, and must take account of the customer types likely to engage with the scheme. BWEA notes that MCS installers' expertise and processes could support registration and customer introduction to FIT scheme requirements.

Q39. Do you agree with the proposed limits of 5MW for renewable technologies and 50kW for gas fired CHP for FITs installations?

BWEA is not convinced of the need for FIT for larger wind installations, but is content with a limit of 5MW so long as the rates set for wind over 500kW are appropriate and that there is clarity of which generators will opt for the FIT or RO early in the development process.

It should be recognised that the scheme's relatively large scope (0-5MW) covers two very different marketplaces – onsite generation and offsite generation. It is likely that the large majority of deployed wind turbines of up to 100kW will be installed primarily to generate electricity for onsite use, and consequently will be owned by a stakeholder group that will not necessarily have expert understanding of the UK energy market structures. This should be specifically catered for within the scheme's structure and design through linking eligibility to an expanded Microgeneration Certification Scheme (MCS).

Q40. If you disagree with the proposed limits, what lower limits would be more suitable and why?

Not applicable.

Q41. Do you agree that generators off the electricity grid should be eligible for FITs? If so, what safeguards should be put in place for these generators to ensure the electricity is being used?

As stated within our RES consultation response of September 2008, BWEA suggests that off-grid generators may be better supported through grants owing to the administrative complexities required to accurately quantify off-grid generation. If FITs are used then the issue is less about whether the energy will be used, since the users will presumably be dependent on the generator for their power needs, but how much electricity is generated in order to know how much money should be paid. To require metering would appear disproportionate, while to apply profiling would reduce the incentive to maintain the equipment properly.

Q42. Do you agree with the selection of technologies for which we will be providing tariffs from April 2010?

BWEA calls for there to be clear differentiation by Government as to those technologies that are genuinely renewable technologies, and those which use existing energy supplies (potentially fossil fuel sourced supplies) more efficiently than other currently deployed technologies. To tackle fuel security and protect UK consumers from future pricing of fossil fuels and carbon, BWEA supports the view that renewable energy technologies should be given priority over low carbon technologies where appropriate in terms of operational requirement and cost. Full attention and recognition should be given to the cost, carbon saving potential, and commercial availability of each technology covered by the FIT scheme.

Q43. Should technologies for which we do not propose to offer a specific tariff from April 2010 be handled by:

- ***Providing a single tariff from April 2010 for all remaining technologies; or***
- ***Considered as a new tariff band as part of regular FITs reviews?***

If deemed necessary that new technologies be brought within the scheme, then it should be done so on the basis of new technology- and scale-specific bands as part of the regular reviews.

Q44. Do you agree that the FITs should not require on-site generators to comply with any energy efficiency standards as a condition for eligibility?

Yes. The structure for the FIT set out in the consultation should give ample incentive for users to use energy efficiently, thus obviating the need for efficiency standards to be enforced.

Policies primarily designed for the uptake of microgeneration technologies should not be complicated, or diluted in their effectiveness, by attempting to tackle legitimate but discrete objectives which would be better addressed with separate policies. For example, the support of the fuel poor should be appropriately addressed through the introduction of enlarged and sufficient ring fencing within the Carbon Emissions Reduction Target (CERT).

We also recognise the more intangible benefits with regards to the positive emotional response of citizens seeing microgeneration technologies in their

communities; such generators can in addition be used as an educational tool. There is also some evidence that having a generator installed has a significant impact on consumers' use of energy, with much more attention paid to conservation when residents are using 'their own' electricity. We therefore believe that those receiving microgeneration production support should not be required to undertake energy efficiency measures; we believe that consumers will adjust their behaviour naturally when they have a generator installed.

Q45. Are there any issues regarding eligibility that we have not foreseen here? If so, how should we address them?

For the purposes of this consultation response BWEA will use the following definitions:

Existing generators – generation units installed before 15 July 2009.

Interim generators – generation units installed after 15 July 2009 and before FIT scheme launch.

New generators – generation units installed after FIT scheme launch.

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As stated within our response to the RES consultation in September 2008, BWEA recommends that the FIT scheme should declare an amnesty on all existing generators, and grandfather all existing generators into the FIT scheme (see response to Q64).

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The consultation does not go far enough in providing certainty to the marketplace with regard to which products and installation practices are eligible for scheme inclusion and which are not, either in the interim period prior to scheme launch or post scheme launch. BWEA urges DECC to make a formal clarification of the scheme eligibility criteria as soon as practicably possible following consultation close (see response to Q51, band/MCS expansion).

If one were to adopt full MCS certification as the necessary prerequisite for FIT scheme eligibility, the current operational status of MCS for wind risks market uncertainty for interim and new generators that could last until autumn 2010. Needless to say, such a scenario could have significantly negative effects on the UK market, UK industry, and UK jobs. BWEA recommends that a pragmatic approach be taken to the current state of MCS operation for wind, so that absolute certainty in the UK market place can be delivered until a point when full MCS certification requirements are deployed to support the FIT scheme.

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BWEA recommends that the following criteria define FIT scheme eligibility for wind products:

- *Pre 15 July 2009* – All products

- *15 July – 31 Dec 2009* – Clearskies listed products, "Responsible" listed products, MCS listed products.
- *1 Jan – 30 September 2010* – Responsible listed products, MCS listed products.
- *30 September 2010 onwards* – MCS listed products only.

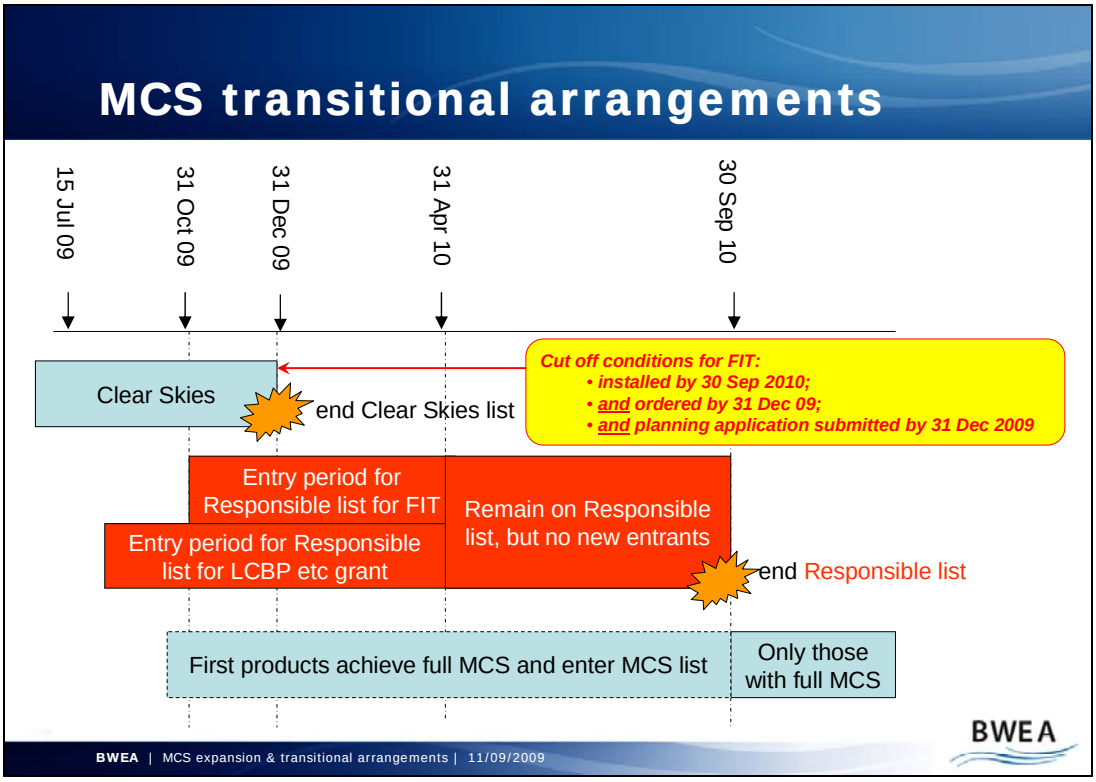

Figure 2: MCS transitional arrangements for wind products

Evidence of a product's compliance with eligibility criteria must be demonstrated at the point of FIT scheme entry (i.e. not at the point of installation).

Description of the various product lists are as follows:

- Clearskies list of products – This list is available from DECC, and currently available from the MCS website. Note that this list is closed to new entry and expected to expire on 31 December 2009. For Clearskies listed products that are ordered before list expiration, and have had a planning application submitted before list expiration, an identified time period will be provided for installation to be completed in order for the product to possess eligibility for FIT scheme inclusion. BWEA suggests this identified time period should be 9 months.
- "Responsible" list of products – This list of product is yet to be created, but would be opened by a formal announcement by DECC of MCS transitional arrangements. BWEA would recommend the eligibility

criteria for entry to this list would centre on a manufacturer producing evidence that it is responsibly engaging with MCS certification processes for a product, by satisfying all of the following:

- A contract for full MCS testing procedures recognised by an EN17025 accredited (or equivalent) Test Laboratory; or a contract for full MCS certification procedures recognised by an EN45011 accredited (or equivalent) Certification Body;
- Completion of power performance testing (See MCS006) by an EN17025 accredited (or equivalent) Test Laboratory.
- Completion of safety and function testing (See MCS006) by an EN17025 accredited (or equivalent) Test Laboratory.

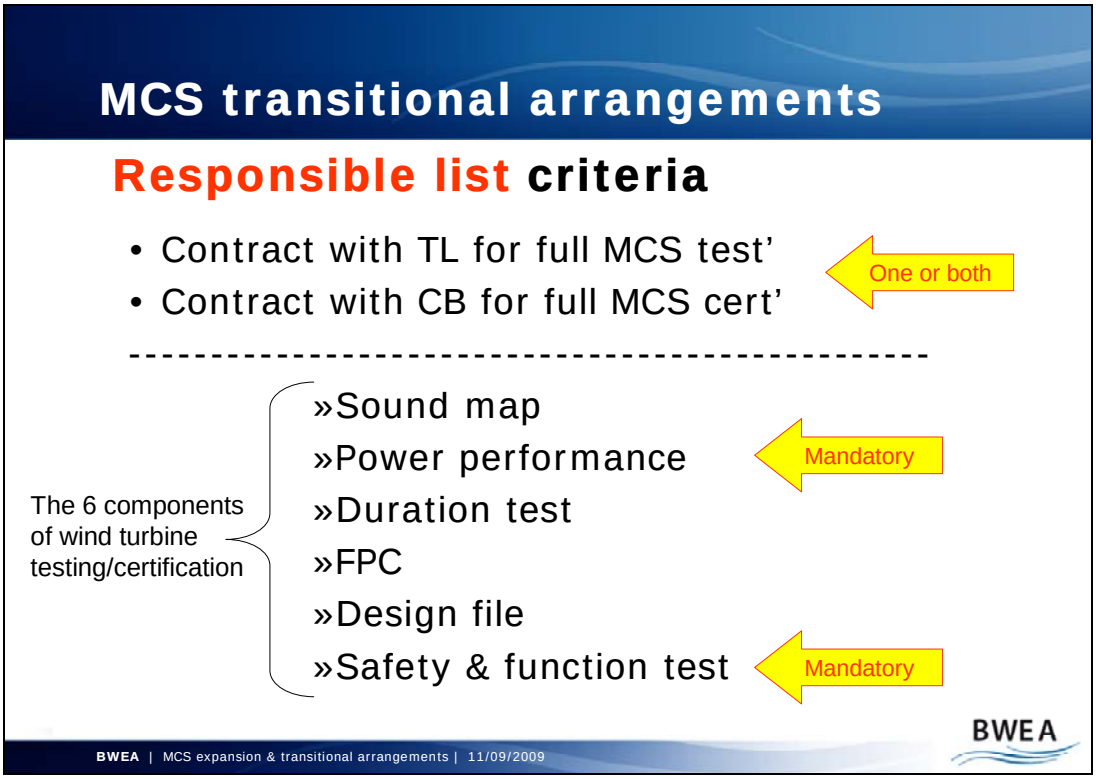

Figure 3: MCS Responsible list criteria

BWEA recommends that the responsible list remain open to new entrants until the launch of the FIT scheme in April 2010. This will allow sufficient number of turbine manufacturers to overcome MCS operational difficulties and responsibly engage with certification processes to the extent that listed products will meet anticipated market demand at the launch of the FIT scheme.

BWEA recommends that the responsible list expires 6 months after FIT scheme launch (i.e. September 2010). For products on the responsible list that are ordered before list expiration, and have had a planning application submitted before list expiration, an identified time period

will be provided for installation to be completed in order for the product to possess eligibility for FIT scheme inclusion. BWEA suggests this identified time period should be nine months (as recommended for the Clearskies list).

- MCS list of products – This will be available from the MCS website. Currently no small wind turbines have completed MCS certification, but it is anticipated that small wind turbine manufacturers will increasingly pursue and complete full certification in due course.

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BWEA would like to state full support for the application of MCS transitional arrangements as the appropriate prerequisite for a new site's eligibility under the FIT scheme, with regard to both the product and installation process. BWEA does not support the use of any other scheme, unless it is recognised as equivalent by MCS.

The operational status of MCS varies by technology type. With regard to wind, it should be noted that the UK, through MCS, leads the world in terms of the development of robust product and installer standards. No other country in the world has as highly developed a system of product certification and installer accreditation as the UK, despite the MCS being at an early stage of its development. This leadership has been developed in the face of a number of challenges specific to small wind, some of which remain, some of which will be addressed through BWEA recommendations on transitional arrangements.

BWEA recommends DECC support any interim generator to be eligible for inclusion within the FIT scheme if the installer has completed accreditation to MCS at the time of FIT scheme launch. Or, in the scenario where an eligible product is installed in the interim by an organisation not yet accredited to MCS at the time of scheme launch, this product would only be absorbed within the scheme upon the completion of MCS accreditation by the installer.

BWEA recommends that with over 50 installer companies already accredited, the MCS installer standards have reached full operational status. Additionally, DECC should note that the content of related standards will be evolved and improved further over time.

BWEA believes that MCS installer standards could helpfully be modified to support FIT scheme operation, and could provide a very useful tool for FIT policy makers to utilise in collaboration with industry. DECC should consider extensions to the standards such as obligating installers to register generators into the scheme.

As referred to above, there have been a number of challenges in delivering MCS to full operational status with regard to small wind products. These challenges have meant that, at the time of writing, no wind product has completed certification to MCS. These challenges can be summarised as follows:

(1) Unlike other technologies, MCS is the first robust national small wind standard in the world; developing such a scheme without a precedent has introduced delays in development and delivery;

(2) Up until announcement of FIT scheme details, there has been little commercial incentive for manufacturers to engage with a voluntary MCS certification process. The UK small wind industry recognises the LCBP structure has historically provided insufficient commercial incentives for the wider wind industry to engage with MCS;

(3) Despite standards being accepted as fit for purpose and sufficiently robust, the cost of testing wind products to MCS remains prohibitively high in the context of current market size. BWEA maintains that UK should mimic US, Irish, Australian, Spanish and other national Governments in financially supporting small wind testing processes in the short term, in order to jump start responsible and sustainable market growth;

(4) The availability of small wind testing facilities (recognised as acceptable under MCS) has been, and continues to be, limited. Only in Q3 2009 did a small wind testing laboratory achieve EN17025 accreditation status for the first time;

(5) Testing small wind turbines in line with MCS requirements can take a long time, potential up to nine months for Class 2 turbines, and even longer for Class 1 turbines. This results in a significant lead time for products between entering testing processes and completing certification.

(6) It is broadly acknowledged that MCS recognised test facilities have capacity limits for the testing of turbines. The number of turbines that can be tested at any one time, or over a set period, may limit the potential of manufacturers to test and certify products within current FIT scheme timescales.

In attempts to pragmatically address current operational challenges of MCS product certification for small wind, BWEA recommends the introduction of MCS transitional arrangements.

In parallel to any DECC announcement on FIT transitional arrangements, it is important that attention is also given to the BWEA recommendations for restructuring the FIT scheme banding structures and eligibility requirements relating to 50-100kW turbines: see below for further details.

In order to ensure sufficient time is given to enable manufacturers to satisfy eligibility criteria for an enlarged Wind Band 3 in time for FIT scheme launch, early clarification of Wind Band 3 expansion will be required – preferably 5-6 months before FIT scheme launch.

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BWEA recommends that any wind product eligible for FIT scheme inclusion should be allocated to the relevant tariff band on the following basis:

Wind band 1: 0-1.5 kW *	**- AEP/RAE: 0 – 2 MWh**
Wind band 2: 1.5-15 kW *	**- AEP/RAE: 2 – 30 MWh**
Wind band 3: 15-100 kW *	**- AEP/RAE: 30 – 200 MWh**
Wind band 4: 100-500 kW	**– Peak power rating, IEC61400-12**
Wind band 5: 500-1,500 kW	**– Peak power rating, IEC61400-12**
Wind band 6: 1,500-5,000 kW	**– Peak power rating, IEC61400-12**

* AEP/RAE criteria applied to MCS wind products (0-100kW)

In order to cater for the type of end user expected to engage with wind products in wind bands 1-3, we recommend sufficient levels of assurance are provided to non-energy expert customers. Subsequently, we support the application of MCS to provide this assurance, and BWEA proposes that MCS covers wind products possessing swept areas of 0-400m^2 (broadly equivalent to a rated power range of 0-100kW).

BWEA recommends that for wind products covered by MCS, the FIT scheme tariff band will be allocated to each installation on the basis of certified performance information, the Reference Annual Energy (commonly known as Annual Energy Production), and NOT rated power.

Unlike large wind turbines (defined here as turbines with swept area in excess of 400m^2), the end users of small wind systems will likely not be energy or wind technology experts. The MCS and the BWEA Small Wind Turbine Performance and Safety Standard have been created to provide greater levels of assurance to non-energy expert customers.

To aid end user engagement, there are two key wind product performance indicators embedded within MCS: (a) Reference Power and (b) Reference Annual Energy (commonly known as Annual Energy Production).

The RP (Reference Power) provides a common methodology for rating product power produced at 11.0ms^{-1}. The RAE (Reference Annual Energy) provides a common methodology for rating product energy production at a reference site of 5ms^{-1} (average annual wind speed), by applying a 5ms^{-1} Rayleigh distribution to a product's power curve. This wind speed is the one typically expected for most small wind systems, certainly those with hub heights of less than 15m, and so is a better indicator of small wind system performance at a reasonable site.

Both national and international standards for small wind turbines now acknowledge that rated power does not inform the potential end user as to turbine performance in conditions relevant to real life possibility. That is to say, wind speeds very rarely blow at 11.0ms^{-1}, and rated power at a rare wind speed gives little relevant evidence as to what performance the product will deliver at wind speeds more commonly experienced at the hub heights

small wind turbines are usually installed at, e.g. 4.5ms^{-1} or 5ms^{-1}. Additionally, there could be two different turbines rated at the same power at 11.0ms^{-1} but that deliver radically different levels of performance at identical generic small wind sites (See Figure 4). In short, the rated power of a turbine is a very poor means by which to inform and educate non energy expert end users when it comes to considering which turbine to install, and what the performance will likely be for a given site.

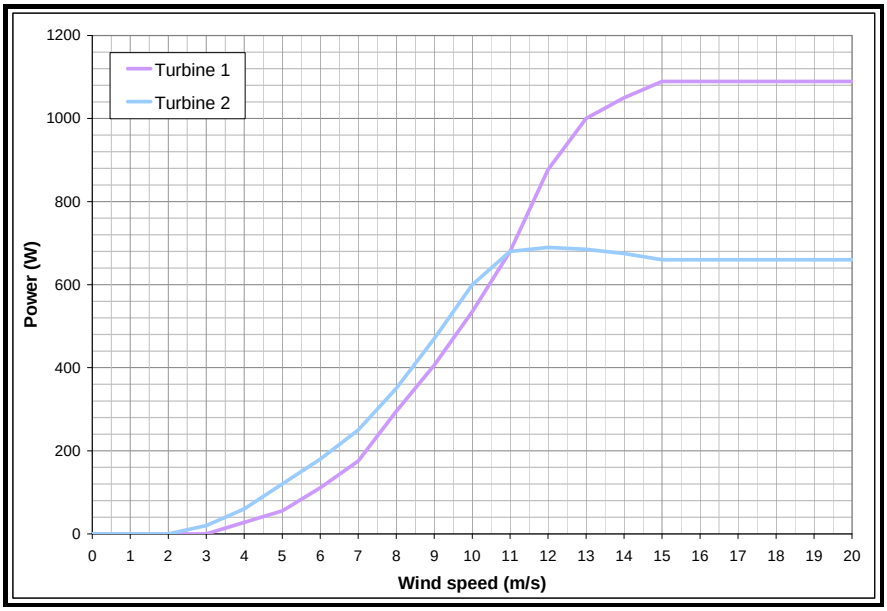

Figure 4: Example power curves for two turbines that possess the same Reference Power (@11.0 m/s) but possess very different low windspeed performance, and thus very different Reference Annual Energy values at a 5 m/s site (See Figure 5).

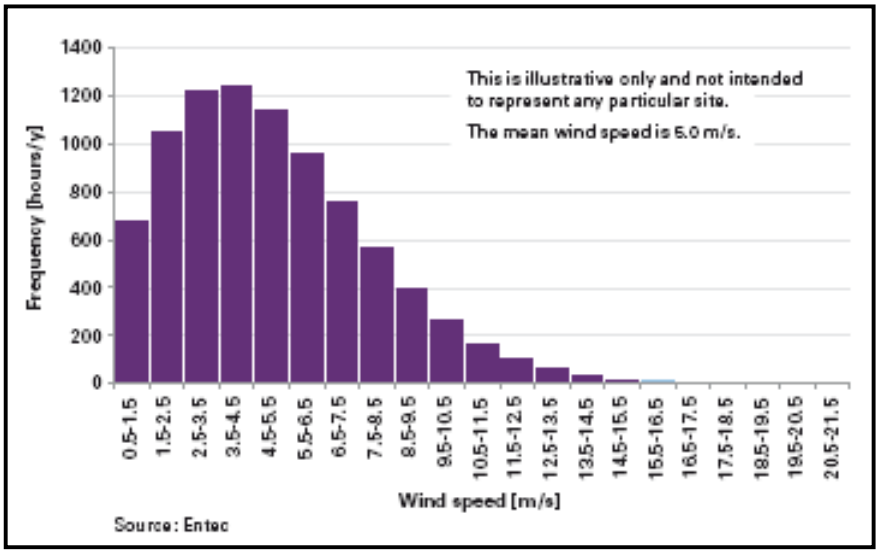

Figure 5: Wind speed distribution for a small wind site, Mean wind speed: 5ms^{-1}

Although not unanimous, there is a strong preference within industry allocate FIT tariffs to all MCS wind products (sub 100kW) on the basis of certified Reference Annual Energy (RAE/AEP), rather than Reference Power (as suggested in the DEC consultation). The BWEA Small System Steering Committee is agreed to recommend this approach for adoption within the FIT scheme for Wind Bands 1, 2, and 3 only.

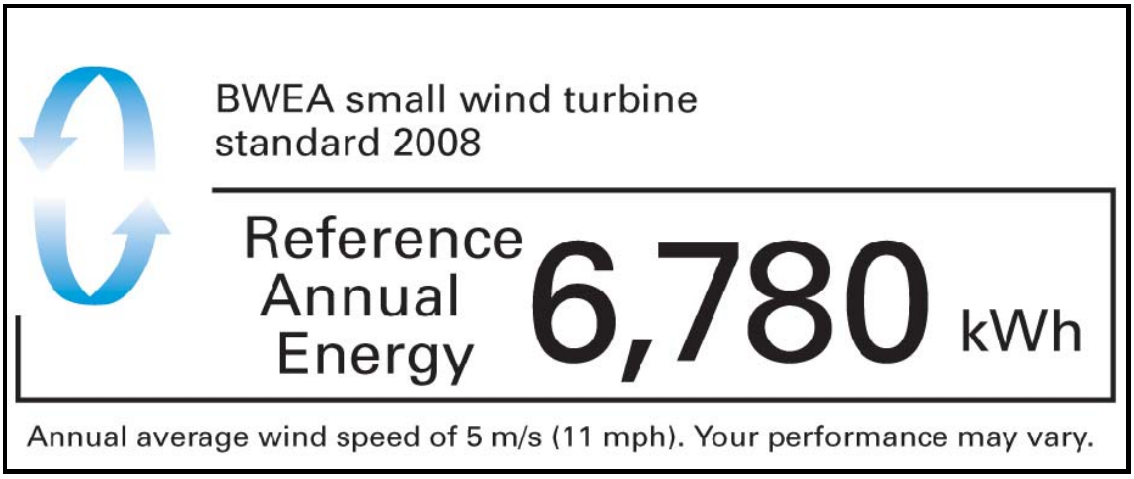

Figure 6: An example of the RAE labeling applied to MCS certified turbines.

For wind products not covered by the MCS, and likely to possess energy expert end users, BWEA recommends the FIT scheme tariff band will be allocated to each installation on the basis of peak rated power.

For wind products possessing swept area in excess of 400m^2 and thus outside the scope of Expanded MCS, we recommend that the FIT scheme does not obligate demonstration of conformity to national or international standards, as is currently the case for RO eligibility. BWEA believes that the requirements of the financial and insurance sector on turbine safety and integrity will provide the necessary support for the preservation of best practice in deployment of wind products not covered by an expanded MCS. Unlike wind products covered by the expanded MCS, larger wind turbines will have end users with higher levels of competence, and understanding of energy specific issues.

Peak rated power should be constructed in line with IEC 61400-12 practice.

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In line with our recommendations to restructure Wind Band 3 (see response to Q51), we recommend that the MCS scope for wind is increased from 50kW to 100kW (i.e. the upper limit is increased from 200m^2 to 400m^2) on the following basis:

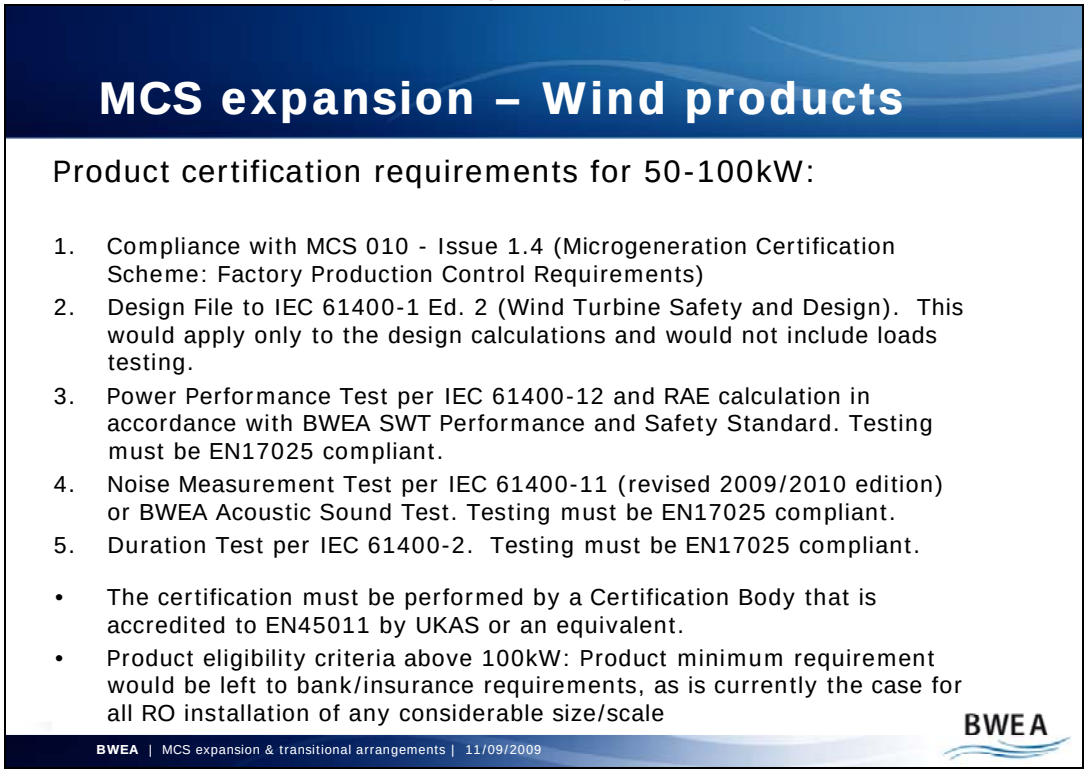

Figure 7: MCS expansion: product certification criteria

We recommend that the likely end users of wind products up and including the 100kW range will not be energy experts, and so it is appropriate that these customers be supported by an expanded MCS scope of up to 100kW (400m^2).

Additionally we propose that Wind Band 3 (15-100kW) be supported by MCS accredited installers. Installers of turbines in the 50-100kW range should be required to be accredited to MCS for sub-50kW turbines, and have endorsement from the manufacturer of the installed product. We also recommend that DECC calls for MCS to align with our proposed FIT scheme Wind Band 3 limits, and be expanded from 50kW to 100kW.

Manufacturers seeking to meet FIT scheme eligibility criteria, as recommended by BWEA for 50-100kW, will need to test products in line with the outlined requirements. Given that the testing of turbines takes significant amounts of time (in the order of 6-9 months) there is a need for DECC to provide early clarification of the following:

(1) FIT scheme banding structure;

(2) FIT scheme eligibility criteria for 50-100kW turbines;

(3) Whether MCS will be expanded to support FIT scheme Wind Bands 1-3.

Please also see BWEA response to Q51 for supporting information on Wind Band 3 expansion.

Q46. Do you agree with our approach not to offer up-front capitalisation to schemes as part of the FITs? If not, what alternative approach do you propose and why?

Yes. So long as the overall level of reward given to the generation of renewable electricity is set at an appropriate level per kWh of production, and provided for a set life span of the technology, front loading of related support should not be implemented for a number of reasons.

Firstly, front loading of any form could encourage irresponsible consumer behaviour and sub-optimal technology use. Up-front funding, based on deemed electricity production, lessens the risk incurred by the consumer with regard to the selection and siting of the product.

Secondly, the frontloading of a FIT scheme would require significant upfront centralised support at a time of difficult economic circumstances.

Lastly, with regard to third party project capitalisation, we would urge that as long as Government acts to ensure strong demand for small scale renewable technologies, the market will respond with innovative financing packages to allow consumers to install them. However, the current economic climate poses a severe risk that traditional providers of commercial loans will not adequately engage or satisfy the demand for deployment.

BWEA would strongly welcome Government action to ensure low-interest loans are available to those wishing to take advantage of the FIT, particularly those on low incomes who would otherwise not be able to participate. BWEA is agnostic on whether this lending is from an institution directly sponsored by Government or from commercial providers but guaranteed by Government. Wherever the finance is sourced, however, access to cheap money will be an enormous boost to the success of the FIT policy, as it was in Germany where state bank KfW performed this function.

Low-interest finance would allow the generation tariff rates to be lowered to some extent, though the danger here would be that installations *require* the finance to be viable and the market would be limited to the capacity of the concessionary lenders.

Q47. Do you agree with our approach that a generator may assign the rights to their FITs payments to a third party? If not what alternative approach do you propose and why?

Yes. This development will do much to encourage creative deployment models, through opening the possibility of embedding scales of economy within processes governing the identification of appropriate sites for technology deployment, for example.

Q48. Do you agree with the proposed model for registration and accreditation of plant claiming FITs discussed in the Accreditation, Registration and Connection section?

Please see response to Q45 and Q51.

In short we recommend:

(1) MCS transitional arrangements be applied to FIT scheme eligibility;

(2) MCS scope be expanded to align with an expanded Wind Band 3;

(3) RAE/AEP is used to allocate tariff bands to eligible products.

Q49. Do you agree with the principle that all generation should be metered to qualify for FITs? Do you foresee any issues with that approach?

Yes. Metering should be deployed wherever possible to ensure performance of a site is accurately rewarded.

BWEA would support a system of regular payments based on volunteered meter readings, where the meter could not be manually read by a data collector within the agreed schedule of payment. BWEA recognises that the scheme administrator could profile the generation trend of each technology and scale, and correct in light of either volunteered reads from the customer, or through manual reads by the data collector which are already legally obliged to take place at least once every two years.

It is clear that the advent and deployment of smart metering would do much to simplify data management requirements of the FIT scheme. To support the success of the FIT, BWEA would recommend DECC investigate fully the possibility that smart meter roll out processes identify scheme recipients as priority deployment points.

Q50. What are your views on regulating which suppliers should be required to offer FITs, and in what circumstances?

All licensed suppliers should be obligated to provide access to the FIT scheme.

Q51. Do you agree with the tariff levels, lifetimes and degression rates we have set out for the chosen technologies? If not, what evidence do you have for choosing alternatives?

Banding structure

BWEA understands that Element Energy provided DECC with a FIT banding structure which fully recognised the energy cost range of wind products across the scope of the scheme. However, we would strongly suggest that factors other than energy cost should be considered, and when considered, should deliver alterations to the proposed banding structures.

BWEA believes that the three bands for wind between 15kW and 500kW should be reduced to two: 15-100kW and 100-500kW.

BWEA would also recommend it would be beneficial to create a new band for 500-1,500kW.

Wind band 1: 0-1.5kW *

Wind band 2: 1.5-15kW *

Wind band 3: 15-100kW *

Wind band 4: 100-500kW

Wind band 5: 500-1,500kW

Wind band 6: 1,500-5,000kW

* Product band allocation based on MCS and RAE/AEP, NOT rated or peak power (see response to Q45).

We believe there are a number of reasons for the creation of our Wind Band 3 (15-50kW becomes 15-100kW):

- International standards for small-scale wind are anticipated to expand from 50kW (swept area: 200m^2) to 100kW (swept area: ~400m^2). The UK FIT scheme (as well as MCS) should reflect such changes and align with international practice.
- A 100kW upper limit better reflects the products available to the UK and international marketplace. BWEA recognises that the wind marketplace has products available at the following rated powers (in kW):

  0 … (heavily populated with wide variety of products) … 20, 30, 33, 50, 50, 50**, 85, 100, 225, 250, 250, 250, 250, 275, 330, 400, 500.

  There is a significant gap in available products between the 100kW unit and the 225kW unit. We recommend that Wind Band 3 upper limit is increased to 100kW to align with this market gap.
- The new banding will avoid needlessly excluding existing products from appropriate band allocation. Should the Wind Band 3 upper limit remain at 50kW, and make use of MCS standards which have a scope limit of 200m^2, two 50kW units would be eligible for this band's rate while a third unit (marked ** above) would not, owing to a swept area only slightly exceeding the MCS limits.
- The energy cost of a 100kW turbine is broadly consistent with that of the 50kW turbine group, but is quite different to the energy cost of the next largest group of turbines, at around 250kW. We recommend that even on energy cost grounds the 100kW turbine range be grouped with its smaller rather than larger cousins. BWEA has already provided DECC with evidence to support this proposal.
- 100kW rather than 50kW is a better representation of the scale of technology that would be applied in an onsite fashion. BWEA has already provided DECC with research to support the view that there are significant UK market opportunities for onsite applications of 50-100kW wind products.
- We also note that a new enlarged Wind Band 3 could offer significant scope for UK industrial growth and economic reward. Currently there is a lack of EU manufacturing capacity in the 30-100kW range, a strong Wind Band 3 would provide incentive for the many UK manufacturers of sub-20kW products to up-scale and become the primary industrial provider for EU markets in this range.

We also believe there are good reasons to institute a new Wind Band 5 for generators of 500-1,500kW:

- BWEA members indicate that a combination of higher specific capital costs for such smaller installations with the lower yield that can be expected means that a higher tariff is necessary at this scale than for larger projects.
- Viability of installations of this size should be preserved so as to maximise the options for owners and ensure that the right generator is chosen for each site.
- The wind industry has had significant experience with turbines of this size, making them a reliable choice for owners who are new to wind power, such as medium sized businesses or community groups.
- Without such an intermediate band, there is a very large drop in tariff level at the 500kW boundary, which would likely encourage gaming.

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Tariff structure

BWEA agrees with DECC's assertion that flat banded tariffs, as opposed to terraced/tiered tariffs, are appropriate for the UK FIT scheme tariff structure. We do not believe that the benefits associated with the latter regarding gaming outweigh its deficiencies with regard to providing clarity to the end user. We support the simplicity of adopting flat banded tariffs in order to maximise end user engagement.

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Degression rates

BWEA acknowledges DECC's intention to "propose degression rates in line with expected technology cost reductions for different technologies at different scales. This gives the technology supply chain industries an indication of the cost reductions that will need to be achieved so that the tariffs can still deliver a sufficient return to encourage investment from potential generators."

We also acknowledge DECC's intention that the degression of tariff rates "is where tariffs for new projects are reduced annually to reflect, and to some extent encourage, expected decreases in technology costs".

Our views on the degression rates are very much linked to the balance outlined within the above quote: "reflect" versus "encourage" technology cost.

There is no doubt that a clear statement on how tariff structures will degress over time, will encourage manufacturers to lower technology costs so to maintain high levels of product attractiveness to potential end users. However, there is a clear difference between a manufacturer's aspirations to reduce technology costs, and their ability, which is primarily dependent upon the market volume.

Given that over 80% of the UK small wind market is supplied by UK manufacturers and that the UK market equates to 20-25% of global small wind demand, there is large potential to deliver technology cost reductions on the basis of increased volume of indigenous demand. However, BWEA notes that it will likely take a minimum of three years' high volume of deployment for UK small wind manufacturers to upgrade capacity and production techniques in order to realise technology cost reductions.

If the tariff rate is to successfully drive technology cost reduction, it will need to maintain high levels of deployment volume for a sufficient period of time for manufacturers to invest in the upgrading of their production processes.

BWEA suggests there is a risk that technology cost reduction may be severely and negatively impacted should tariff rates be reduced ahead of manufacturers' ability to upgrade production processes. It is these process improvements that deliver cost reduction, and so any act to prematurely reduce tariff rates, before technology cost reductions have been realised, risks permanently reducing market volume to the extent that the upgrading of production processes by manufacturers is severely impaired.

BWEA supports a DECC approach to degression to "reflect" contemporary technology costs, and the time it takes manufacturers to respond to increased volume of technology uptake. It is unrealistic to suggest substantial technology cost reduction can be obtained within one or two years of increased deployment. Our members believe it would take 3-4 years for UK small wind manufacturers to respond to high volumes by bringing new, more advanced production processes into operation.

To appropriately account for UK manufacturing upgrade timescales, and to optimise the speed and extent to which tariff rates can be reduced, BWEA strongly recommends an initial 3 year freeze on small scale wind tariffs before degression is applied.

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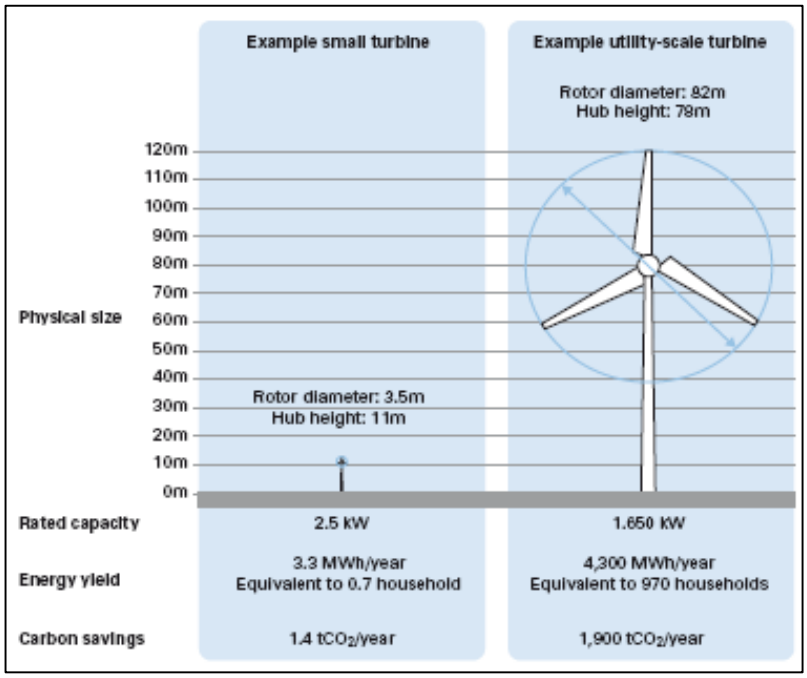

Figure 8: Hub height comparison between small and large turbines.

Many small wind systems operate at a hub height far lower than utility scale wind turbines (see Figure 8), and far lower than the minimum hub height used in DECC/Element Energy FIT modelling which only went as low as 25m.

Because the available wind resource is closely related to the hub height of the turbine, small wind systems typically operate at lower wind speeds than larger machines.

The size of the market available to small (or large) wind systems is largely dictated by:

- At what wind speed the technology becomes financially viable;
- The number of sites possessing wind speeds of minimum financial viability.

If the UK FIT scheme is to meet a primary objective in delivering technology cost reduction, sufficient volume of annual deployment will need to be delivered to drive economies of scale within manufacturing and production processes.

BWEA recommends that in order to encourage technology cost reduction for small wind systems of under 15kW, the minimum wind speed at which to incentivise the necessary high volume technology uptake is between 4.5 and 5ms^{-1} (owing to relatively low hub heights). Furthermore, we do not agree that small wind systems should be treated in the same way as larger turbines, and strongly recommend that minimum wind speed viability will

differ with scale. Subsequently, we cannot support the analysis conducted by Element Energy (2008) which suggested that "sub-5MW turbines are unlikely to be economic at wind speeds of less than 5.5ms^{-1}". It is incorrect to apply a single wind speed across such a large variance of technology scale, with such large inherent variance in hub heights. We note that data used to model Capacity Factors in relation to specific wind speeds was taken from a previous Element Energy report which did address turbines rated at less than 50kW, or consider hub heights of less than 25m. The consequence of not accurately addressing resource availability specific for small wind systems and their related hub heights, of less than 15m, has significantly undermined the strength of subsequent modelling for Wind Bands 1 and 2.

Furthermore, we note that DECC has applied the rate of return approach to a generic site with a wind speed of 6.5ms^{-1} for ALL scales of wind technology. A site modelled with a 6.5ms^{-1} wind speed is applicable for larger machines because a volume market is deliverable at the related hub heights. These wind speeds are NOT applicable for small wind systems with hub heights of, usually, less than 15m. Although UK sites with 5.5-8ms^{-1} do exist at a 15m hub height, they do not exist in such volumes that economies of scale can be driven into the UK manufacturing processes that produce the majority of them.

If the UK FIT scheme is to drive technology cost reductions with small wind systems, the FIT scheme will need to sufficiently incentivise high volume deployment, which at sub-15m hub heights only exists at **wind speeds of 4.5-5ms^{-1}.**

The recently published Energy Saving Trust Domestic Small Scale Wind Report stated that: "Data gathered through the field trial indicates that none of the sites with building mounted turbines had average annual recorded wind speeds of 4m/s or greater, and only a third of free standing pole mounted turbines had average annual recorded wind speeds of 5m/s or greater … the low recorded wind speeds illustrate that many of the sites in the field trial – and likely in the UK as a whole – are providing less energy generation than predicted."

EST data		Percentage (%) of market at NOABL-MCS windspeeds (Average m/s)								
England And Wales	**Number of viable sites**	**<=4**	**4 - 4.5**	**4.5 - 5**	**5 - 5.5**	**5.5 - 6**	**6 - 6.5**	**6.5 - 7.5**	**7 - 7.5**	**7.5 - 8**
Building mounted turbines	104600	18.1	20.5	28.7	25.7	5.9	0.6	**0.5**	**0**	**0**
Free-standing turbines	130650	0	13.9	17.6	37.7	23.4	6.0	**1.2**	**0.2**	**0**
Scotland	**Number of viable sites**	**<=4.1**	**4.1 - 4.59**	**4.59 - 5.31**	**5.31 - 6.53**			**6.53 - 7.25**		
Building mounted turbines	93000	1	8.9	42.3	32.3			15.4	0	0
Free-standing turbines	79700	0.9	7.5	37.4	37.7			16.4	0	0

Figure 9 A: EST domestic wind turbine market data

The recent work by the Carbon Trust and the EST field trial support the view held by industry for many years – wind speeds available to hub heights

typically experienced by small wind systems are far lower than those typically experienced by utility scale turbines.

The recently published EST market research data, which accompanied the EST domestic small scale wind turbine field trial report, gives an accurate representation of how good UK domestic site distribute in accordance with average annual mean windspeed. The results clearly illustrate that vast majority of good sites for small wind systems (at low hub heights: 10-15m) possess wind resource at levels well below the 6.5ms^{-1} modelled by DECC for the purposes of setting tariff rates.

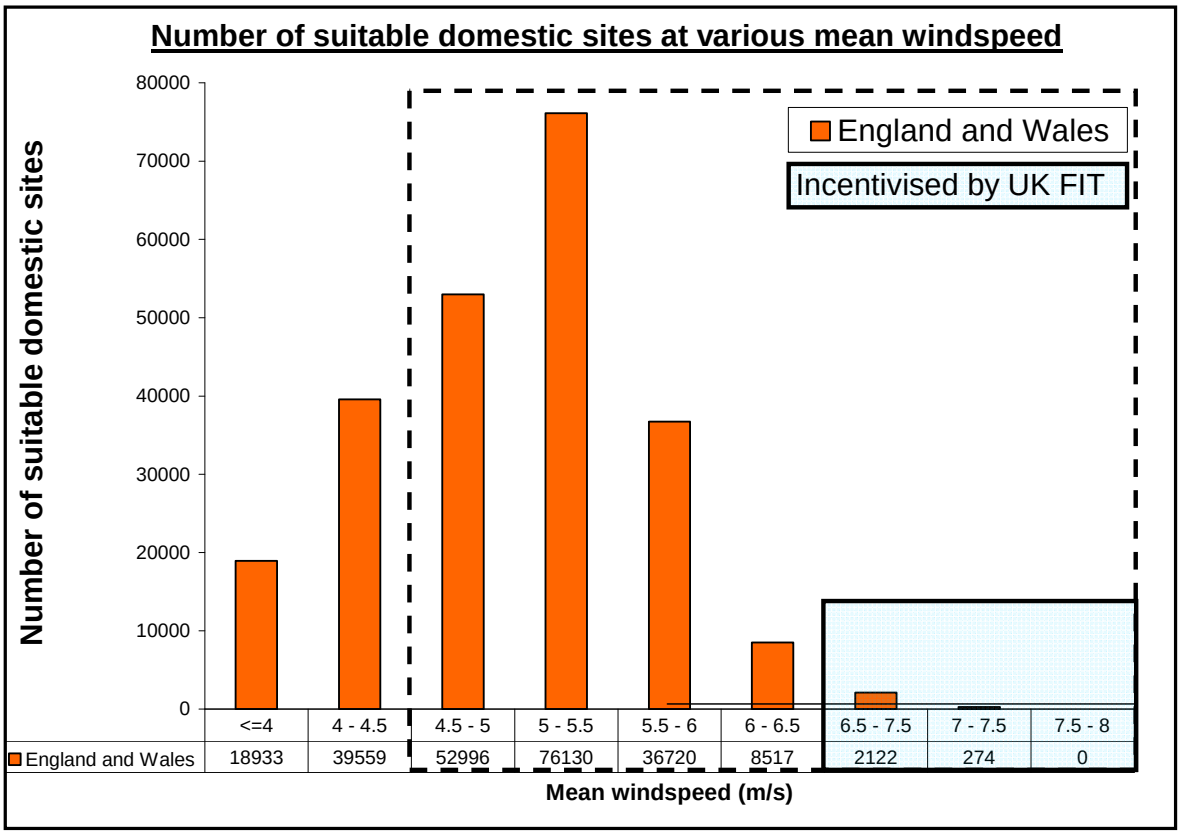

Figure 9 B: Data from the Energy Saving Trust (EST) domestic wind turbine field trial report – Approximately 95% of the domestic market in England and Wales is insufficiently incentivised by the current FIT proposals.

On the basis on current DECC modelling (using 6.5ms^{-1}) for sub 15kW turbines, approximately 95% of the domestic small wind market in England and Wales is under incentivised. Similarly, 83% of the domestic small wind market is under incentivised (and this is despite Scotland enjoying the best wind resources in Europe), (See Figure 9 A, B, and C).

BWEA would recommend that the data provided by EST for the domestic small wind market are broadly applicable for the commercial, agricultural, leisure, public sector and industrial small wind markets.

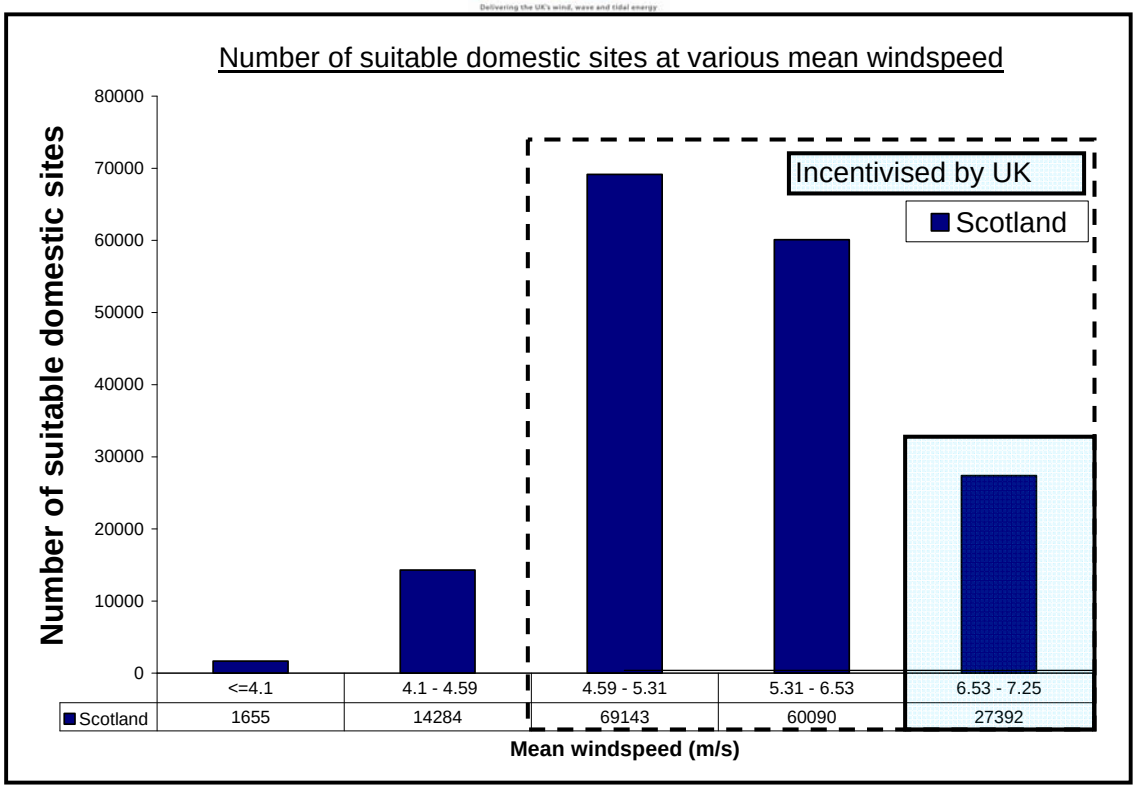

Figure 9 C: Data from the Energy Saving Trust (EST) domestic wind field trial report – <u>Approximately 83.1% of the Scottish domestic market is not sufficiently incentivised</u> under the current FIT proposals.

The consequence of DECC/Element Energy incorrectly modelling at 6.5ms^{-1} for sub 15kW turbines will include the following:

- A high volume UK market is very unlikely to be achieved in the short term;
- Technology cost reduction is severely slowed;
- Technology uptake is appropriately incentivised only at the very best windspeed sites, found in small quantities;
- UK industrial leadership is impaired, allowing non-UK manufacturing sectors to catch up with leading indigenous businesses;
- The UK market (25% of global demand) loses the opportunity to become the primary driver of global small wind technology cost;
- The ability of UK small wind manufacturers to upscale their technology range to become the medium wind powerhouse of Europe is placed firmly on the back burner.

BWEA recommends that DECC remodel Wind Bands 1 and 2 on the basis that sub 15kW turbine installations possess lower hub heights and experience lower mean windspeeds than has been originally catered for in tariff construction thus far by DECC.

Size	5.5 m/s	6 m/s	6.5 m/s	7 m/s	7.5 m/s	>8.0 m/s
B-M <1.5kW urban	2%	2%	2%	2%	2%	2%
B-M <1.5kW rural	8%	8%	8%	8%	8%	8%
Mast mounted micro (urban)	2%	2%	2%	2%	2%	2%
Mast mounted micro (rural)	8%	10%	12%	13%	13%	14%
1.5–15kW urban	7%	7%	7%	7%	7%	7%
1.5–15kW rural	15%	15%	19%	23%	23%	26%
15–50kW urban	7%	7%	7%	7%	7%	7%
15–50kW rural	15%	15%	19%	23%	23%	26%
50–250kW	10%	15%	19%	23%	23%	26%
250–500kW	13%	18%	23%	26%	26%	28%
500–3000kW	15%	20%	24%	27%	28%	32%

Figure 9: DECC/Element Energy Windspeed/Capacity factor modeling.

If DECC are committed to applying a degression rate to small wind generation tariffs for the first 3+ years of the scheme, we would recommend that in order to encourage a volume market a Rate of Return of between 8-10% be applied to sub 15kW turbines on the basis of a 4.5-5ms^{-1} site. In the absence of any Element Energy consideration of sub 5.5ms^{-1} sites we would recommend the application of the listed 5.5ms^{-1} Capacity Factors (Cp) attributed to Wind Band 1 and 2 (0-15kW, or 0-30MWh) on the basis of "Mast mounted micro (rural)" and "1.5-15kW rural" respectively.

We would calculate that this approach would ordinarily deliver generation tariffs as follows:

Wind band 1: 53 p/kWh (See Figure 10 - 8% Cp)
Wind band 2: 31.5 p/kWh (See Figure 10 – 15% Cp)

However, we do not expect levied FIT funding to incentivise installation on all the 4.5-5ms^{-1} sites from the start of the scheme, if only because of UK and global production capacity limits. We recognise that over time there is a steady ramp up required to build a volume market with technology cost reduction (rather than subsidy) contributing a key role to increasingly incentivising the more numerous, but lower windspeed, sites. However to build initial momentum towards technology cost reduction, larger proportions of the potential sub 15kW market will need to be sufficiently incentivised than is currently being proposed by DECC.

On the basis that degression rates for Wind Bands 1 and 2 (0-15kW, or 0-30MWh) are frozen for the initial 3 years of the FIT scheme (See above section on degression rates), thus enabling technology cost reductions and production upgrades to be realised by UK manufacturers, BWEA recommends that a Rate of Return of 8-10% (See Tariff level section, below) be applied to

sub 15kW turbines on the basis of a 6ms^{-1} site, and delivering moderately reduced Capacity factors than were applied in the original DECC modelling.

We recommend that this approach (degression freeze + moderately reduced Cp) would deliver generation tariffs as follows:

Wind band 1: 35 p/kWh (See Figure 10 - 11% Cp)
Wind band 2: 29 p/kWh (See Figure 10 – 16% Cp)

BWEA recommends that these tariff levels more accurately reflect small wind operational characteristics, small wind market requirements as well as potential industrial and technological opportunities for Wind Bands 1 and 2.

Specific note should be given to the current case that the product ranges of all of the 18 UK small wind manufacturers sit within Wind Band 1 and 2 (0-15kW, 0-30MWh).

With the UK market currently equating to 20-25% of global demand, there is significant opportunity to affect the global technology cost. Failure to structure the FIT tariff level appropriately could negate a rare opportunity for the UK market to become the leading force in driving down the global cost for a specific technology. The importance of this point is intensified in the context that UK manufacturers are well positioned, as the world's largest exporters, to deliver these cost reductions to fast expanding international markets, and dominate a lucrative global sector for decades to come.

BWEA recommends that the UK FIT scheme remodel Wind Bands 1 (0-1.5kW) and Wind Band 2 (1.5-15kW) on the basis of incentivising a high volume market at far lower windspeeds than were originally modelled by DECC.

BWEA recommends that for Wind Bands 1 and 2, on the basis of initial degression rate 3 year freeze, applied Capacity factors should be reduced to account for lower operational hub heights.

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Tariff level

BWEA acknowledges that there are good reasons for providing differential rates (e.g. in the range 5-8%) on a technology specific basis, and we support a continuation of this approach post consultation. We do not support a single rate of return (e.g. 5% or 8%) being applied to all technologies, and note that such a principle would be impossible to deliver within a flat banded tariff model owing to the energy cost variance within each identified technology band.

BWEA believes that there are very good reasons for providing small scale wind technology bands with tariff levels arrived at by appropriately applying a rate of return at the top end of any range

deemed appropriate by Government, and that this top end could usefully be as high as 10%.

The reasons for such a position are:

(1) The relatively high difficulty and risk associated with negotiating the UK planning system should be considered within the setting of related tariffs;

(2) The added cost for wind turbines to negotiate the UK planning system, not simply the planning application fee but also the costs associated with the numerous additional conditions many planning officials current make on wind turbine development of even the smallest scale.

(3) Additional resource reliability risks – wind is harder to predict than other resources;

(4) Industrial added value benefits (see Figure 1);

(5) Export opportunities for UK manufacturers;

(6) Downstream (installer) employment opportunity;

(7) Upstream (supply chain) employment opportunity.

We note that previous recommendations from BWEA have supported a technology neutral tariff for sub-15kW units on the grounds that end users are likely not to be energy experts, and thus such a 'flat' tariff would provide beneficial simplicity to support policy engagement. We also note that technology neutral tariffs at the small scale level would also be simpler for administrators, avoid market distortion, and encourage appropriate siting and the most cost effective carbon saving technology being deployed at any given site.

However, we also note that DECC has decided to progress the FIT scheme policy development on the basis of providing rates of return for each technology within a specific range.

Wind band 1 (0-1.5 kW)

See section on Cost modelling & technology cost reduction above.

Similarly to Wind Band 2, this band covers a product range in which the UK possesses a strong manufacturing industry and a relatively well developed upstream supply chain. Many of the UK manufacturers in this band export a significant proportion of their products to international markets.

There are clear industrial added value benefits to be obtained in this area of the UK global sector, and the industrial benefits of creating indigenous industry and an export industry should be closely considered in setting tariff levels for this band. As such we recommend a rate of return of 8-10% is applied for Wind Band 1 in support of the industrial value added benefits available through developing UK industrial strength in this area.

Owing to relatively low hub heights used for this scale of product, high volume deployment will only be delivered if small wind sites with mean wind

speed of 4.5–5ms^{-1} are incentivised appropriately (see section on cost modelling and technology cost reduction above).

However, on the basis that degression rates for Wind Bands 1 and 2 (0-15kW, or 0-30MWh) are frozen for the initial 3 years of the FIT scheme (See above section on degression rates), thus enabling technology cost reductions and production upgrades to be realised by UK manufacturers, BWEA recommends that a Rate of Return of 8-10% be applied to sub 15kW turbines on the basis of a 6-6.5ms^{-1} site, but delivering moderately reduced Capacity factors than were applied in the original DECC modelling.

We recommend that this approach (degression freeze + moderately reduced Cp) would deliver generation tariffs as follows:

Wind band 1: 35 p/kWh (See Figure 10 - 11% Cp)
Wind band 2: 29 p/kWh (See Figure 10 – 16% Cp)

BWEA recommends that Wind Band 1 be incentivised on the basis of a 4.5–5ms^{-1} mean wind speed site, for a rate of return of 8-10%.

Wind band 2 (1.5-15kW)

See section on Cost modelling & technology cost reduction above.

This band covers a product range in which the UK possesses a strong manufacturing industry and a relatively well developed upstream supply chain. Many of the UK manufacturers in this band export a significant proportion of their products to international markets, and could potentially dominate a lucrative international sector for decades to come

There is clear potential for the many UK manufacturing companies that exist in this band to upscale product ranges to the 30-100 and 100-500 kW ranges over the coming decade, should consistent support be found in the home market. The lack of EU manufacturers in these ranges means there is a significant economic and employment opportunity for the UK to become the medium-scale wind powerhouse of Europe, but again only if the home market is sufficiently developed in the short to medium term.

There are clear industrial added value benefits to be obtained in this area of the UK global sector, and the economic benefits of creating an indigenous industry, exporting strongly, should be closely considered in setting tariff levels for this band. As such we recommend a rate of return of 8-10% is applied for Wind Band 2 in support of the industrial value added benefits available through developing UK industrial strength.

Without such indigenous industrial strength BWEA would not recommend rates of return of this order.

Additionally, owing to the relatively low hub heights used for this scale of product, high volume deployment will only be delivered if small wind sites with mean wind speed of 4.5–5ms^{-1} are incentivised appropriately (see section of cost modelling and technology cost reduction above).

It is critical for the success of the FIT scheme in incentivising deployment in this band that a high volume market is encouraged. The agricultural sector in particular holds significant potential for high volume deployment, but this volume will only be achievable at wind speeds of 4.5–5ms^{-1}.

However, on the basis that degression rates for Wind Bands 1 and 2 (0-15kW, or 0-30MWh) are frozen for the initial 3 years of the FIT scheme (See above section on degression rates), thus enabling technology cost reductions and production upgrades to be realised by UK manufacturers, BWEA recommends that a Rate of Return of 8-10% be applied to sub 15kW turbines on the basis of a 6-6.5ms^{-1} site, but delivering moderately reduced Capacity factors than were applied in the original DECC modelling.

We recommend that this approach (degression freeze + moderately reduced Cp) would deliver generation tariffs as follows:

Wind band 1: 35 p/kWh (See Figure 10 - 11% Cp)
Wind band 2: 29 p/kWh (See Figure 10 – 16% Cp)

BWEA recommends Wind Band 2 be incentivised on the basis of a 4.5–5ms^{-1} mean wind speed site, for a rate of return of 8-10%.

Wind band 3 (15-100kW)

With regard to the expanded Wind Band 3 (see above: 15-100kW), we recommend that a generation tariff level of 20.5p/kWh, as attributed to the original Wind Band 3, is reasonable. As outlined above, we recommend the cost dynamics are broadly equivalent to those of 50kW turbines. BWEA has already sent DECC evidence to this effect.

BWEA notes that modelled wind speeds as applied by DECC and Element Energy is likely to be enjoyed by products within this range. For information, hub heights of 100kW turbine can reach up to 30-37m.

BWEA recommends that 20.5p/kWh is a reasonable tariff level for an expanded Wind Band 3 (15-100kW).

Wind band 4 (100-500kW)

We acknowledge that our proposals for banding restructuring means the range of product covered by this tariff band has expanded. However, we support the approach DECC has taken to previous tariff setting for the original Wind tariff 4 (250-500kW), and we suggest the stated tariff of 16p/kWh is reasonable and appropriate for our proposed Wind band 4 (100-500kW).

BWEA recommends that 16p/kWh is a reasonable tariff level for an expanded Wind Band 4 (100-500kW).

Wind band 5 (500-1,500kW)

Analysis of BWEA's database of wind projects shows some development of turbines in this range, but it is generally limited to high-wind areas of the UK such as northern and western Scotland. This would indicate that a rate higher

than that available under the RO is necessary to ensure the significant spread of projects of this size. Information provided by members indicates that specific capital costs are around £2m/MW for individual turbines of this size, and that consequently a generation tariff of 7p/kWh in addition to the 5p/kWh export tariff would be required for a 10% return. If a return of 8% is the maximum allowed, the tariff would consequently be lower, but it would be difficult to compete for the capital required at this scale against other investments of similar size. If low-cost finance were available, this would reduce the tariff needed (see response to Q46).

Wind band 6 (1,500-5,000kW)

In general, BWEA believes that projects developed in this range should see similar reward under the FIT or RO, making the choice between the two that is available a meaningful one – if one choice is significantly more attractive than the other then developers will overwhelmingly opt for that. The generation and export tariffs set out in the consultation document do give that meaningful choice and are thus suitable for projects in this size range if they are not indexed to inflation. Were Government to index the tariffs as we recommend (see below) then obviously they will not need to be set as high to begin with.

In general, BWEA believes that both the generation and export tariffs should be index-linked, giving owners of FIT generators assurance of the value of their output over time. Without indexation, inflation could significantly erode the value of the tariffs and leave owners out of pocket. This would result in lower headline values for the tariffs at the start of the scheme, easing cashflow issues as the numbers of generators accessing the FITs ramp up.

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Lifetime

Given the relative early stage in technological development of small wind technology, the lifetime of new innovative products is difficult to accurately gauge.

BWEA recommend that should the duration of tariff reward be shortened, generation tariff would require remodelling in line with our recommendations on Rates of Return and applicable windspeeds.

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Taxation

BWEA recommends early clarification of the taxation treatment of generation and export tariffs provided under the FIT scheme.

BWEA recommends that domestic and non domestic installations covered by our proposed Wind bands 1 and 2 are tax exempt.

Q52. Do you agree with our proposed guaranteed minimum price for the exported electricity? If not, what price would you propose and what is your proposal based on?

See response to Q36.

Q53. Does the proposed review structure provide the right balance between providing certainty and adapting FITs to the changing circumstances in which it operates?

The approach looks reasonable. Some clarity on the criteria to be used to invoke early reviews would be welcome. Any framework against which scheme tariff levels, or degression rates, would be considered for review and revision must identify economic benefits as a key indicator. Any decision on scheme tariffs should take account of UK industry that has been and could be encouraged by the scheme, as well as its relative strength with regard to the global marketplace.

Q54. Do you have any initial views on the relationship between FITs and those in fuel poverty or on low incomes?

The case of those on low incomes, or those in fuel poverty, is a strong argument for the provision of third party project capitalisation – see response to Q46.

BWEA has previously urged that as long as Government acts to ensure strong demand for small scale renewable technologies, the market will respond with innovative financing packages to allow consumers to install them. However, the current economic climate poses a severe risk that traditional providers of commercial loans will not adequately engage or satisfy the demand for deployment. We would therefore strongly welcome Government action to ensure loans are available.

The provision of a Government-sponsored green loan scheme that accompanied the FIT could provide the fuel poor, and those on low incomes, to gain the benefits of appropriately sited renewable energy projects.

Q55. Do you agree that the levelisation process described above provides the best system for redistributing costs amongst suppliers? If not, what other ways can we levelise costs across suppliers?

BWEA notes that there have been and continue to be substantial difficulties associated with the administration of the RO for small scale generators, plus significant complications posed to its engagement with non-energy expert customers. Not only was the RO not designed for the typical end user of small scale generators, but the reaction by the incumbent RO administrator to correct these failings was slow, and arguably has still not addressed processes identified as bureaucratic and inappropriate.

BWEA recognises the large extent to which streamlined administration can be delivered to the governance and operation of the FIT scheme through learning from previous mistakes made in small scale generators' engagement with the RO. We also recognise that there are numerous cost saving benefits

that can be made by making use of existing processes within wholesale and retail electricity markets, by using the existing processes governing generators, suppliers, and DNOs.

We also recognise that a large number of operations currently successfully administered under the UK's balancing and settlement code procedures could be brought to bear on the administration of the FIT scheme. BWEA notes the proposal put forward by the UK BSC Company (ELEXON Ltd) and would suggest this proposal has significant merit for adoption within any UK FIT administration structure.

We also note that owing to previous programmatic difficulties in administering the RO, it may be useful to introduce competition to the marketplace for providing supportive services to the operation of Government renewable energy incentive schemes.

Although we would generally defer to others on matters relating to levelisation, as rule of thumb, BWEA would advocate for DECC to seek a cost effective solution which made use of existing best practice and existing governance structures where ever possible.

Q56. How can the levelisation process facilitate participation in FITs for small suppliers?

See BWEA response to Q55.

Q57. Should suppliers be able to include an administration cost in the levelisation process? If so, what should the level of that allowance be and how should it be determined?

See BWEA response to Q55.

Q58. Should the levelisation process include consideration of large and unforeseen price differences between prices paid to generators and the market value?

See BWEA response to Q55.

Q59. Do you agree with the proposed approach to auditing, assurance and enforcement? If not, what alternative approach do you propose and why?

See BWEA response to Q55.

Q60. Are there any issues regarding the role of suppliers that we have not foreseen here? If so, how should we address them?

See BWEA response to Q55.

Q61. What do you think is the best way of defining an installation for the purposes of FITs?

The definition of an "installation" and/or "site" should be designed so to support the scheme's overall objectives, i.e. to encourage deployment of renewable energy appropriate to a given site. The definition of

installation/site should look to avoid introducing perverse incentives such as the following:

(1) the reclassification of +5MW projects into smaller segregated entities in order to gain scheme eligibility;

(2) new deployment negatively impacting the benefit of existing capacity on the same site;

(3) where it is possible to meet an identified onsite demand with a single installation of sufficient scale, deploying multiple smaller units for the delivery of superior financial reward at the expense of optimal cost effective carbon saving;

(4) Sub-optimal carbon saving technology is deployed, over a more appropriate technology for a given site, on the grounds of increased financial benefit.

BWEA recognises that a flat banded tariff approach, as proposed by DECC and supported by BWEA, will inevitably provide some opportunity for gaming and perverse consumer reaction. However, the extent to which this opportunity is acted on can be minimised by appropriately structuring the bands and by appropriately establishing clear rules of policy engagement on the part of the customer.

BWEA recognises that perverse consumer reaction would be reduced by minimising the range covered by each band, and by minimising the variance in tariff rate between any adjacent bands. Beyond comments made by BWEA in response to Q51, we believe that DECC has achieved a reasonable balance between appropriate band design and the desire to fulfil separate policy objectives (e.g. ensuring the tariff rate encourages deployment specific to its scale range or technology).

In terms of providing clear rules of policy engagement for the customer, BWEA recommends DECC employs the following approach:

Definition of a site: any single generator unit or group of generator units of the same generation type, operating via a single point of connection to the distribution network.

Clarifications:

(1) If two generating units of different type share a single connection point, each generating unit shall be treated as a separate site.

(2) If five generating units of one type, and a single generating unit of different type share a single connection point, each group of generation type shall be treated as a separate site. So in this case there will be two sites.

For instances where a site consists of a single generation unit, the available tariff rate will be applied, specific to the technology and associated band. For instances where a site consists of multiple generation units installed in a single year, potentially of varying scale, the tariff rate applied to an individual

unit will depend on the cumulative total of the site's RAE or rated power, with units counted from the smallest to the largest.

For example:

Site A: 3x 6kW, 1x 1.5kW

1.5kW = 30.5p/kWh (cumulative: 1.5kW – Band 1)

6kW = 23.0p/kWh (cumulative: 7.5kW – Band 2)

6kW = 23.0p/kWh (cumulative: 13.5kW – Band 2)

6kW = 20.5p/kWh (cumulative: 19.5kW – Band 3)

For the treatment of units installed in different years, see response to Q63.

(BWEA does not strongly recommend the FIT be provided for offgrid appliances, see response to Q41).

Q62. Once an installation is defined, do you think further checks are required to verify this? If so, what would these checks be?

There may be good reason to provide some form of enforcement service to support the wider scheme. However, BWEA notes that for units covered by the MCS, the accredited installer should tasked with verifying the characteristics of the generation unit specific to its treatment within the FIT scheme. The MCS already possesses a system of enforcement checks that could include the requirements of the FIT scheme.

Q63. How could we deal with installations at a single site installed in different years?

If the addition of further capacity does not take the total capacity over a boundary into a different band, then there is no issue unless there has been a degression rate applied. Given that each generator will be metered separately, then the appropriately degressed tariff can be given to each.

If the new capacity does take the installation over the boundary, then the last generator installed should be rewarded at the generation tariff level for the higher capacity band while the existing generators remain in the smaller band – again, the separate metering of each generator will allow this. For example, if a 300kW wind turbine is installed in one year and another 300kW machine a year later, then the first turbine should get the tariff for the 100-500kW band, while the second should get the tariff for the 500-1,500kW band (see also response to Q61).

Cross Cutting

Q64. Do you agree with the proposed approach for the treatment of existing generating stations?

With regard to sub-50kW installations, BWEA invites DECC to reconsider its previously stated position that existing units deployed before the 15 July of 2009 would be grandfathered into the FIT, but at lower rates than for new installations. BWEA calls for all existing sub-50kW installations to be

grandfathered into the FIT at the same rates as equivalent new installations on the following grounds:

(1) The current DECC proposals (generation tariff of 9p/kWh, and an export tariff of 5p/kWh) would leave most existing units worse off in comparison to current practice. This is mainly because most suppliers currently offer higher export rates than 5p/kWh. It is uncertain whether suppliers will offer export tariffs at a higher rate than the suggested regulated rate of 5p/kWh, especially as there will be no linked benefit of receiving tradable ROCs, as is the case now.

(2) Owners of existing installations are early adopters of the technology. By penalising early adoption via withholding higher tariffs, DECC are in danger of undermining a group of grass-roots technology users who would otherwise have been leading advocates for the renewables sector and for further technology uptake within their communities.

BWEA recommends DECC declare an 'amnesty' on all products installed pre 15 July 2009, and provide grandfathering rights to tariff support to the same extent as new and interim installations.

Q65. Do you agree with the proposed approach for the treatment of generating stations that completed installation during the interim period?

Yes, but on the basis that these installations meet the conditions set out in our response to Q45.

Q66. Do you agree that, for non-household installations built during the interim period, we should make access to FITs conditional upon repayment of any central Government grant received for such installations?

No, BWEA would disagree. The number of sub 50kW turbines in this category is relatively small. The cost of including such a small number of installations should be outweighed by the benefit of rewarding, rather than punishing, early adopters who can become valuable advocators for self generation in the future.

Q67. Do you agree with the proposed approach for the treatment of new generating stations once the FITs scheme becomes operational?

Yes, as long as the point of choice between FIT and RO is made early enough in the development process. We believe that developers should, *at the latest*, declare if they wish to participate in the RO once they have planning permission and all planning conditions have been satisfied; unless a positive choice to participate in the RO is made, generators under 5MW should be assumed to be in the FIT system. Ofgem, as administrator of the RO, should make a statement on what capacity of <5MW plant is not yet built but

entering the RO, at least six months before the start of each compliance period; any additional capacity gaining planning permission after this date will have little impact on ROC supply in the compliance period following.

See also our responses to Q45 & Q50.

Q68. Do you agree with the decoupling of support for heat and electricity for new renewable CHP plants? What are the technical issues that need to be considered in implementing transitional arrangements towards the introduction of FITs and RHI for CHP installations?

Yes. BWEA would suggest DECC differentiates between new generation systems that are wholly renewable and those which rely on fossil fuels.

Q69. Do you agree that FITs should not restrict access for those projects covered by other schemes?

Yes, on the condition that an individual project's carbon benefits are counted only once, and thus attributed to only one scheme.

For example, BWEA suggests the FIT should apply to projects eligible to be counted under the Government's Carbon Reduction Commitment (CRC). A likely scenario is one where a medium to large commercial organisation will exhaust all energy efficiency improvements in a bid to conform to the CRC. Having exhausted such measures, this company would consider subsequent environmental measures to further progress CRC performance, for example self generation. If the CRC does not recognise self generation supported by FIT incentives, then the possibility of this company taking further environmental steps towards energy self sufficiency could be gravely undermined. In short, the risk of not providing FIT payment to CRC projects is that a potentially significant tool encouraging small scale generation uptake will be lost. BWEA calls for CRC-eligible small scale renewable generation projects receive FIT payment, but that associated carbon savings be attributed to CRC policies only (and not the FIT policy).

BWEA agrees that projects in receipt of public grants (Low Carbon Building Programme Phase 1, or other) should be fully eligible for FIT payment.

Annex A: Proposed FIT generation tariff levels as recommended by BWEA

Wind band no.	Band scope	2010-2013 tariff (p/kWh)
1* (Micro)	0-1.5kW* (0-2MWh)	35
2* (Small)	1.5-15kW* (2-30MWh)	29
3* (Small-medium)	15-100kW* (30-200MWh)	20.5
4 (Medium)	100-500kW	16
5 (Community)	500-1500kW	7
6 (Utility)	1500-5000kW	4.5

***Wind Bands 1, 2 and 3 use MCS to define tariff eligibility on the basis of certified Reference Annual Energy (RAE/AEP), NOT on the basis of rated power.**

See BWEA consultation response to question 51 for further detail on tariff construction.