

# **Renewable Energy Strategy**

## **Sub-consultation: Feed-in tariffs for small-scale electricity generation**

### **BWEA Submission**

*QA1: Do you agree with our assessment of the basic starting principles that feed-in tariffs for small-scale electricity generation should adhere to? Are there other principles you think we should consider?*

BWEA recommends that the basic starting principles for the development of feed-in tariffs for small-scale electricity generation should be as following:

- Any support mechanism must satisfactorily interact with the UK's liberalised electricity market;
- The right of the microgenerator to change supplier must be fully respected;
- RO support for large scale renewables must not be adversely affected;
- Installations should not receive double incentives;
- Owners of generating equipment should not be discriminated against;
- The interface between the microgenerator and the support policy mechanism must be a simple and easy for the consumer;
- Any support mechanism must lend itself to fast implementation and operation so as to incentivise industry in the short term. Lengthy policy development must be avoided as a primary objective;
- Any support policy must reward actual product performance, rather than product rating or expected performance;
- Any support policy must endeavour not to place additional burdens on host distribution networks. The architecture of the policy should seek to alleviate existing high levels of network strain through appropriate and large scale deployment of microgeneration;
- Any support policy mechanism should encourage the appropriate operation of the product in question (maintenance, siting, system setup);
- Any support structure must clearly differentiate between micro-renewable electricity technologies and low carbon technologies which extend consumer reliance on fossil fuels.

*QA2: What are your views on the option we have described? Factors we would like you to consider in your response include:*

- if there are problems with the option described or improvements you could suggest;*
- if you can envisage a more effective way of implementing feed-in tariffs for small-scale electricity generation.*

BWEA is acutely aware the UK electricity microgeneration sector urgently requires the provision of the appropriate levels of support. Contrary to Government statements made within the consultation, unnecessary and excessive delays in delivering the appropriate support mechanism could result in severe consequences for UK microgeneration industry. Further delay in supporting a competitive UK micro- and small wind industry would significantly erode its position of world leadership at a time when other national governments are already providing jump-start measures to their respective indigenous markets. Additionally, without fast policy implementation, the microgeneration supply chain may struggle to ramp up fast enough to adequately address the needs of zero-carbon new-build policies. Thus, we contest the view that Government may “afford to take time”<sup>1</sup> in designing and implementing a support structure for microgeneration technologies, if this results in years of further deliberation and consultation. There should be clarity on the policy in months and not years.

We hold strong concerns that the design and structure of the FIT model proposed in the consultation document does not satisfy all our overarching principles (see response to QA1 above), and would not lend itself to fast implementation. We believe this should be replaced by a model which:

- can quickly be fully implemented and operational;
- is administratively streamlined;
- rewards product performance rather than prediction or rated product characteristics;
- rewards total generation rather than export, thus reducing demands on the distribution network;
- is consumer friendly;
- makes use of smart metering technology;
- addresses interoperability issues, and facilitates rather than prevents change of supplier arrangements.

BWEA welcomes Government’s invitation to explain a possible alternative framework through which to support renewable electricity microgeneration technologies.

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<sup>1</sup> RES Consultation – 5.3.13

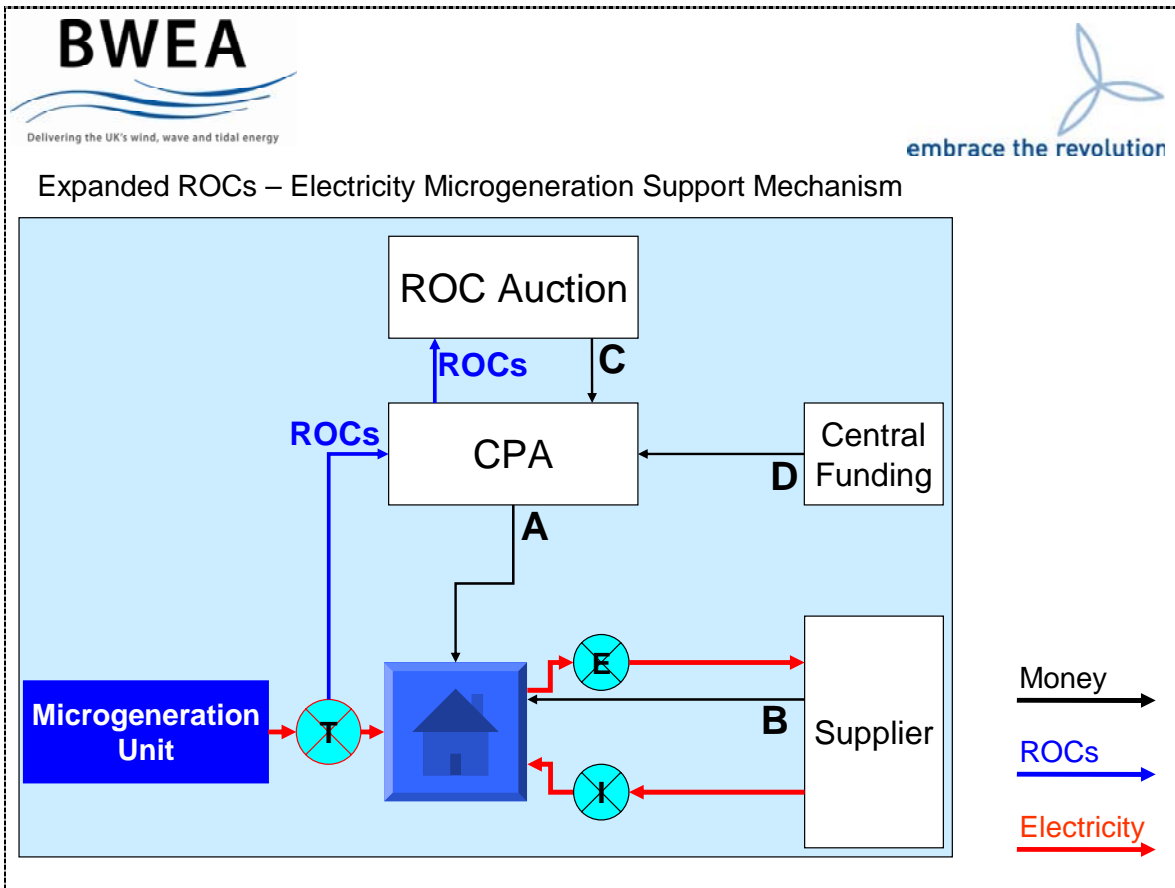


Figure 1: BWEA Expanded ROCs Diagram

BWEA supports the view that the microgenerator should be rewarded at a total level which would sufficiently encourage the short to medium term uptake in microgeneration technologies, thus bringing microgeneration technology to market and enabling the commercialisation of related industries.

Our proposed model assumes the microgeneration unit is connected to a building's main electricity supply which is subsequently connected to the distribution network. It should be noted that any microgeneration support mechanism should support the deployment of microgeneration technologies by both domestic and non-domestic consumers alike.

BWEA believes that the annual Total Microgeneration Reward (TMR) will need to be set high initially. This may be as high as 40p/kWh, though the exact level set needs more analysis and engagement between Government and industry. We use the 40p/kWh figure here for illustrative purposes. The TMR set for new systems should ramp down thereafter at a rate of perhaps 5% per annum (as is the case for the German FIT for solar PV). The TMR will be made up of avoided power purchases (at retail prices, say 15p/kWh), export power income (at wholesale prices, say 4p/kWh), and income paid by a

Central Purchasing Agent (CPA), which is the difference between the power income and the TMR. Each installation will need to be an accredited RO generator to receive the incentive, as this reward is in return for the ROCs generated: the CPA is purchasing the ROCs for resale to suppliers in an auction, thus recouping a portion of the price paid to the generator. The difference between the revenues paid to the generators and the ROC income from auction will have to be covered from another source. Our preference in the first instance is the surplus fund generated by the Non-Fossil Purchasing Agency through its management of the NFFO contracts. Alternatives for funding could include funds from the auctioning of EU ETS credits.

The CPA sets the incentive each year, taking a view of future power prices and making assumptions about customer behaviour, at a level which meets the TMR set for each year. Microgeneration units will receive the production bonus at the level available on scheme entry for twenty subsequent years of operation. Further explanation as to this process is given in our response to QA6.

As far as the microgenerator is concerned, he/she will financially benefit in the following way:

- reduced bills from reduced import demand;
- payment from the supplier for exported electricity (possibly credited to standard bills);
- regular payment from CPA for total generation.

We are very much open to suggestions as to how the proposed “expanded ROC” model may be adapted to better suit the requirements of industry stakeholders such as Suppliers, Microgenerators, and the market regulator. For example, it may be sensible for the Suppliers to be given responsibility to operate the interface between the CPA and the microgenerator so to meter read, make payment and process ROCs. Certainly the arrangements for administering the Obligation for large numbers of small generators will have to be simplified further if the burden on Ofgem is not to become intolerable.

We recognise significant steps have recently been taken by Ofgem in attempting to streamline RO certification and operation for microgenerators. However, it will be necessary for the CPA/Supplier to isolate the consumer from the need to administer or handle ROCs at all within an “expanded ROC” model.

We feel the benefits of using an “expanded ROC” model over the proposed model are as follows:

- Business processes currently governing the import/export of electricity by microgenerators require little to no change, avoiding significant additional cost being placed on suppliers;
- Few regulatory changes would be required, for instance in the Balancing and Settlement Code, thus few if any alterations to Supplier billing systems would be needed;

- Existing revenue streams, i.e. the Renewables Obligation, are utilised, so reducing the level of new financing required to centrally fund the scheme;
- Total production is rewarded, rather than export. The consumer owning the microgenerator is incentivised to use the output on-site rather than export production to the grid. The effect will be to reduce overall network demand, with associated benefits of lower distribution losses and potentially avoided network investment. Consumers are also incentivised to minimise energy usage, as well as change behaviour through use of own generation when available, so as to gain the maximum benefit from their power production;
- The operation of this model is aligned with the liberalised nature of the UK electricity market;
- This model is no less consumer friendly than any other model proposed. Following registration, the consumer simply receives a regular payment from the CPA;
- This model avoids perverse incentives to suppliers which make microgenerators unattractive customers;
- Critically, this support model can be implemented quickly, without unnecessary and potentially lengthy delays which could hold severe consequences for the UK microgeneration industry and delivery of national zero carbon policies.

*QA3: Are there any other bodies or organisations that would be impacted by feed-in tariffs for small-scale electricity generation that we have not considered?*

BWEA believes this policy would have a significant beneficial impact on the UK small wind sector, building a sufficient rate of annual deployment such that UK manufacturers can maintain world leadership and exploit current export opportunities to the benefit of UK industry and economy as a whole.

We also recognise the positive educational impact increased deployment of microgeneration technologies will likely have on the construction/building industry, ahead of ambitious zero carbon new build policies. We believe this educational effect will spread throughout the general public as more and more people see renewable generation within their communities.

*QA4: Who do you think should have access to feed-in tariffs for small-scale electricity generation? Factors that we would like you to consider in your response include:*

- different generation technologies;*
- size of generation station (i.e. to distinguish from eligibility of large-scale generation for support under the Renewables Obligation);*
- whether generation is primarily for own use, supply locally or for export;*
- whether generation is on or off-grid;*
- whether or not energy efficiency measures should be required.*

a) Different generation technologies

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 always be deployed in place of low carbon technologies where appropriate in terms of operational requirement and cost. Full attention and recognition should be given to the cost AND carbon saving potential of each technology.

We believe the level of support offered to genuinely renewable electricity microgeneration technologies should ensure market forces and the consumer are able to compare technologies on their own merits, through technology neutral policies. However, we note that there are strong arguments for supporting the UK small wind system industry over indigenous manufacturing industries of other technologies (see response to Q20).

b) Size of generation station

Whilst BWEA recognises the primary importance of delivering the appropriate level of support to small wind systems of less than 50kW, we also support the safeguarding of existing market support mechanisms for the large scale renewable sector, and thus recognise the need for clear thresholds for eligibility. For wind technologies in particular, we believe that eligibility to any new scheme should not be given to any generating unit larger than 500kW, though any decision on the threshold needs to be made on the basis of clear criteria and analysis, which has not yet been set out. BWEA is open to the possibility of different threshold levels for different technologies, recognising their different characteristics and needs.

c) Whether generation is primarily for own use, supply locally or for export

Any support policy should endeavour to ease the burden on distribution networks resulting from increasing system demand. Furthermore, the policy should seek to alleviate existing high levels of network strain through appropriate and large scale deployment of microgeneration. Thus, BWEA would encourage the architecture of any support mechanism reward of the production, as opposed to export, of electricity.

d) Whether generation is on or off-grid

Extending any scheme of support based on production to the off-grid sector would appear to be a complex task, and most likely would require generation to be deemed since there is no meter involved. Given the relatively small numbers of installations, Government should extend support through some form of grant or tax break, recognising the contribution that off-grid generators can make but not involving them in the administration of a production-based scheme.

e) Whether or not energy efficiency measures should be required

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.

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*QA5: Do you think it is reasonable to put in safeguards to limit the potential cost of feed-in tariffs for small-scale electricity generation, and if so how could those safeguards be set, and what would the access criteria be? Possible factors and criteria we would like you to consider include:*

- *a limit on overall number of new installations in a given period;*
- *a limit on new installed capacity in a given period;*
- *whether priority should be given to particular groups; for example, people in fuel poverty.*

BWEA is open to the notion of integrating a safeguard mechanism within a FIT style model, so as to limit the potential costs. Whatever safeguard is examined, the overarching principles (see response to QA1) of the scheme should be respected, and importantly the security of financial supply for units already deployed through such a scheme should be upheld, i.e. any activated safeguard would be applied to scheme entrants rather than existing participants.

We feel the application of a limit to overall number of new installations in a given period would be an inappropriate means by which to safeguard potential costs. Any safeguard should be informed by correct analysis of the benefits, costs and potential of the technologies, as well as acknowledge the economic benefit in developing related indigenous industry (see response to Q19). BWEA believes the recent report by Element Energy on microgeneration<sup>2</sup> is not an accurate reflection of these for the small wind system sector and we call upon Government to use figures provided by the industry when formulating policy.

BWEA would question the reasoning and benefit in prioritising one technology over another, certainly in terms of renewable electricity microgeneration technologies. Market forces and the consumer should be allowed to compare technologies on their own merits, through technology neutral policies.

BWEA would suggest that prioritisation of particular groups should not occur within any FIT policy, and that it is recognised that this a support mechanism focused on the UK retrofit market as a whole. 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).

*QA6: How would we set the feed-in tariffs for small-scale electricity generation? Factors that we would like you to consider in your response include:*

- the basis for setting the number of tariffs and their level;*
- initial costs, electricity production rates and differing carbon saving potential of generation equipment;*
- how long installations should receive the relevant tariff;*
- how, when and on what basis we would vary the tariffs for new installations;*
- how different tariffs would impact on multiple installations at one location, e.g. a building with wind turbines and solar panels.*

a) The basis for setting the number of tariffs and their level

As previously stated, BWEA calls for parity in the level of financial support provided to all micro-renewable electricity generating technologies. Market forces and the consumer should be allowed to compare technologies on their own merits, on a level playing field through technology neutral policies. BWEA notes that there are strong arguments for supporting the small wind systems industry and thus we would not wish to see this sector supported to a lesser extent than any other (see response to Q20).

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<sup>2</sup> The growth potential for Microgeneration in England, Wales, and Scotland. Element Energy 2008.

Clearly, the level of support given needs to be sufficient to drive significant market growth, without which the benefits of volume production will not be gained. If a lower level is chosen to start, then delivery will be poor, costs will not fall and the reward will have to remain at about the initial level. If, however, the initial level is set high, prompting investment, competition and innovation, then costs will likely fall rapidly and thus the reward level can be ramped down similarly.

As introduced in our response to QA2, we envisage an “extended ROC” support mechanism with an overall level of support being offered to microgenerators per unit of generation, which when added together make up the Total Microgeneration Reward (TMR). The TMR represents the overall reward available to the microgenerator per unit of generated electricity and will be obtained from three separate streams:

### ***Reward 1: Import reward (R1)***

Payment received in the form of a reduced electricity bill, by the displacement of electricity that would otherwise have been imported at retail market prices (Figure 1: I). The value of this electricity to the generator is thus approximately 15p/kWh at current prices.

### ***Reward 2: Export reward (R2)***

Payment received from selling surplus electricity to a Supplier at a set minimum rate (Figure 1: B). This electricity is then exported to the grid. Suppliers are obliged to reward exported electricity equal to or higher than a rate set by the market regulator. The export reward is then credited to the microgenerator import bill. Current export reward deals on offer from suppliers are set at approximately 4p/kWh; we assume this figure in our analysis though there are arguments that this is not a true reflection of the value of this power.

### ***Reward 3: Renewable electricity reward (R3)***

The microgenerator will receive payment (Figure1: A) from the Central Purchasing Agent (CPA) in reward for total generation (Figure1: T) and in exchange for associated Renewable Obligation Certificates (ROCs).

The rate at which the CPA calculates the reward per unit of total production will depend on year of scheme entry, as well as a number of set and changing parameters. For the purposes of calculating R3 (Figure1: A):

- CPA uses a stated percentage of total electricity production that is exported to the grid as per the technology in question (e.g. 30% for small wind systems). A technology's expected export percentage is set by the market regulator, though in real life the export is metered;
- CPA notes the UK retail electricity market export price, as set annually by the market regulator;

- CPA notes the UK retail electricity market import price, as is current in the market and expected going forward;
- CPA takes account of the current Total Microgeneration Reward (TMR=R1+R2+R3) level for that year, as set by the market regulator. This could start at 40p/kWh in the first year and ramp down by 5% per annum thereafter;
- CPA then calculates the Renewable Electricity Reward (R3) specific to the year of the scheme and the TMR level. Microgeneration units installed that year will then receive a fixed Renewable Electricity Reward (R3) for 20 years thereafter;
- The process of recalibrating R3 is repeated each year to take account of export/import prices appropriate for that year, such that the TMR level is satisfied.

Once the CPA has calculated R3 for a particular year of the scheme, all microgeneration units entering the scheme that year will receive this level of renewable electricity reward (R3) for the duration of scheme participation. The microgenerator's meter (Figure1: T) is read and payment (Figure1: A) may be made in exchange for the related ROCs. Funds necessary for payment of R3 would be partially covered by the subsequent auctioning off of the obtained ROCs on the wholesale electricity market, with the remainder covered by an as yet undefined central fund (e.g. NFFO Surplus fund, EU ETS auction receipts, Treasury, re-activating the fossil fuel levy).

b) Initial costs, electricity production rates and differing carbon saving potential of generation equipment

Clearly all these factors are important in the analysis of the correct reward level for small generators. However, since we call for a production reward system, this means that production rates and carbon saving potential are not the issue between technologies as the benefit per kWh should be the same for each. The key parameter is the income seen by the generator, and this needs to be set at a level that justifies their investment. In the first instance, there will need to be an incentive for early adoption of a new technology, which points to a high initial level. BWEA believes that would call for an overall level support to begin in the region of 40p/kWh in the first year of the scheme, thereafter ramping down at a rate of ~5% per annum, though as we point out above, further analysis and consultation is required to set the exact reward level (see response to Q20, QA2, & QA5).

c) How long installations should receive the relevant tariff

Products should receive the relevant tariff at a fixed constant rate for the duration of the product life, with duration of scheme eligibility limited at 20 years (the expected lifespan of modern small wind systems).

d) How, when and on what basis we would vary the tariffs for new installations

BWEA believes the tariff should be set high initially and ramp down relatively quickly thereafter. As we note above, figures of 40p/kWh initially, ramping

down at a rate of 5% per annum, would appear to be warranted, on the basis that as industry responds to increased consumer interest and increased rates of technology deployment, the cost of technology will come down and thus require less overall support. This needs to be examined further to give the appropriate numbers for each of these variables.

e) How different tariffs would impact on multiple installations at one location

Since we call for technology-neutral reward, this issue is easily dealt with, with all generation metered and rewarded at the same level. Likewise, the number of generators on a site does not affect the principle of export being rewarded separately.

The policy support should not discriminate against those seeking to install more than one generator, of whichever kind. Government should be aware that existing and anticipated policies will act to incentivise customers in achieving economies of scales where possible (EIA Regulations, Planning, GPDO only allow singular installations). We note that the "extended ROCs" model proposed by BWEA provides a natural incentive for the technology owner to match generation capacity to onsite demand, thus limiting the reward offered to generated energy not needed onsite.

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*QA7: What arrangements should apply to:*

- *currently existing small-scale renewable electricity installations;*
- *installations which enter into operation before feed-in tariffs come into effect?*

BWEA recognises that previous Government announcements have given strong indications to the consumer as to the level and timing of increased support for small wind systems through the delivery of "double ROCs" in April 2009. The applicability of a FIT system should take account of scheme predecessors.

BWEA believes that historic installations be grandfathered into the new scheme for the remainder of a set unit life span, e.g. a seven year old small wind system with a set life span of twenty years, would be eligible for thirteen ( $20-7=13$ ) years of tariff support.

BWEA recognises that transitional support arrangements should look to avoid perverse impacts on consumer purchasing behaviour through clear and fair timetabling. Previous restructurings of market support mechanisms (LCBP Phase 1) were lengthy and poorly managed, to the extent that the UK small wind sector froze for a significant period in anticipation of improved support from Government (that never came). If repeated, such a freeze on consumer interest could have severe negative impacts on a UK manufacturing industry.

*QA8: Do you think that financial markets will move to assist potential small-scale electricity generators with financing of the initial capital cost of renewable installations, or should we seek to introduce policies that will guarantee frontloaded support?*

So long as the level of reward given to the microgeneration of renewable electricity is set at an appropriate level, 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 could encourage irresponsible consumer behaviour and sub-optimal technology use. Upfront funding, based on deemed electricity production, lessens the risk incurred by the consumer with regard to the selection and siting of the product.

We also recognise that the frontloading of a FIT scheme would require significant upfront centralised support, most likely from the Treasury, at a time of difficult economic circumstances. We feel it likely that financial markets would assist small scale electricity generators if the scheme reward is set at the appropriate level for the appropriate timescales. Thus we believe that as long as Government acts to ensure strong demand for microgeneration technologies, the market will respond with innovative financing to allow consumers to install them.

*QA9: How should the costs of feed-in tariffs for small-scale electricity generation be met? Factors we would like you to consider in your response include:*

- *who the payment should be administered by;*
- *how payments should be monitored and regulated;*
- *how the overall costs of feed-in tariffs should be disbursed and among which organisations;*
- *how administrative costs should be funded;*
- *how frequently payments should be made to generators and how frequently costs should be disbursed;*
- *who should meet charges by the DNO for use of their system for exported electricity.*

a) Who the payment should be administered by

We note the NFPA could act as the CPA, in the knowledge that it already owns and operates a ROC auction (see response to QA2).

b) How payments should be monitored and regulated

Transparent business processes should be embedded within the practice of the CPA, with responsibility for annual auditing and continued monitoring falling to the market regulator (see response to QA2).

c) How the overall costs of feed-in tariffs should be disbursed and among which organisations

The model we have put forward automatically equalises the cost of the system across all suppliers through the use of ROC auctions to raise some of the money for payment to customers. The administrative cost of export arrangements and billing should not be high, and suppliers should be able to absorb them, since they will be actively competing for these customers.

BWEA does not hold very strong views on where the extra funding between the ROC income and the price paid to generators should be sourced from (see response to QA2), as long as it is performed in an equitable manner and satisfies the overarching principles as proposed by BWEA (see response to QA1). We note that the NFFO surplus fund has resulted from the support mechanism for the renewable electricity industry, and we would call for it to be utilised for the benefit of consumers and the UK microgeneration industry. Additional funding could be sourced from EU ETS auction receipts, direct from the Treasury, through re-activation of the Fossil Fuel Levy, or from other avenues.

d) How administrative costs should be funded

The administrative costs of the CPA can be recouped from the ROC auction receipts, while as noted above, suppliers should be able to absorb the administrative cost of export arrangements and billing.

e) How frequently payments should be made to generators and how frequently costs should be disbursed

Payment should be made at least annually, and depending on metering technology used, could reflect standard billing timetable and process. This would mean most generators seeing payments quarterly or monthly if smart meters are a requirement for being eligible for the tariff.

f) Who should meet charges by the DNO for use of their system for exported electricity

BWEA urges Government to acknowledge that currently consumers are unfairly paying for the use of the distribution system twice, once at export, and once at import. Government should closely consider the benefits large scale uptake of microgeneration will likely have on existing distribution networks, and structure the related charges so not to disincentivise suppliers/consumer from closer involvement with the deployment of micro-renewable technologies.

At the moment, microgenerators provide benefits to the network in the form of lower distribution losses and, potentially, avoided investment in the network. At present these benefits mainly flow to the DNOs by default. Any system of reward for small generators needs to capture these benefits for the generators that create them. Doing so will lower the overall cost of the FIT system, while making the true costs and benefits to the host DNO clearer. In

our model, the payment made for export of power to the network should reflect these embedded benefits.