

3. Annex 2 – Feed-in Tariffs for small scale electricity generation

3.1 Question A1: 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?

Fuel Cells UK agrees that any feed-in tariff system should be designed so that people cannot benefit from both feed-in tariffs and the RO.

We also agree that owners of qualifying generating equipment should not be discriminated against in any way compared with other electricity consumers.

We believe that feed-in tariffs should support low carbon generating technologies up to 10MW, above which the RO should apply. This issue is discussed in greater detail in our response to Question 3.

3.2 Question A2: What are your views on the option we have described? Factors we would like you to consider in your response include:

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

Whilst Fuel Cells UK broadly supports the proposed approach, we are aware that there are potentially a number of alternative strategies that might help to minimise or manage costs more effectively, particularly in relation to how costs are redistributed among suppliers, and where finance support comes from. In addition, it must be recognised that there are issues associated with developing a feed-in tariff system, such as smart-metering, that would need to be resolved.

Consequently, while Fuel Cells UK supports the concept presented by the Government in principle, and welcomes the opportunity to comment, we feel that the design of a feed-in tariff system needs to be the subject of a detailed debate in order to address the full range of issues adequately.

3.3 Question A3: 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?

This would depend largely on the design of the system. One group of stakeholders not mentioned in the list, but who should be considered are the technology developers. A core principle behind the introduction of a feed-in tariff is to stimulate investment and innovation in developing low cost, energy efficient technologies and assist with bringing them to market.

3.4 Question A4: 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:

- i. Different generation technologies**
- ii. Size of generation station (i.e. to distinguish from eligibility of large-scale generation for support under the RO)**
- iii. Whether generation is primarily for own use, supply locally or for export**
- iv. Whether generation is on or off-grid**
- v. Whether or not energy efficiency measures should be required.**

i. Different generation technologies

We believe that all low carbon technologies should be eligible for support under any feed-in tariff system that is developed. This is absolutely vital if the Government is to realise its objectives for reducing carbon emissions in the most cost effective and efficient way possible. Fuels cell CHP systems, both large and small, have been shown to offer

significant improvements in terms of energy efficiency when compared to current technologies. This is discussed in greater detail in our response to Question 3 and Question 20.

Additionally, improving the efficiency of the UK energy system will, in effect, make it easier for the UK to realise its EU renewable energy targets, since the same amount of renewable energy will make up a larger proportion of the UK's energy consumption.

On these bases, Fuel Cells UK strongly advocates a Government policy that supports all low carbon energy technologies.

ii. *Size of generation station (i.e. to distinguish from eligibility of large-scale generation for support under the RO)*

Fuel Cells UK believes that an upper limit of 10MW should be set. All low carbon generating technologies below this limit should be eligible for inclusion in a feed-in tariff system. See Question 35.

iii. *Whether generation is primarily for own use, supply locally or for export*

iv. *Whether generation is on or off-grid*

Fuel Cells UK is keen to see the avoidance of a potential paradox, whereby systems which produce electricity erratically, such that it does not meet local demand and requires export, receive the same credit under a tariff scheme as electricity which is produced in quantities which are aligned with local need. For example, a wind turbine might well produce electricity during an off-peak period, when there is no local demand and when the market price for electricity on the grid is low. Depending on how feed-in tariffs are designed, this may increase the financial burden on suppliers or other funding bodies. Fuel cell systems, however, are designed to operate to meet demand. By definition, this is more likely to be at peak times, when the market price is optimal, ensuring that any feed-in tariff system operates in the most efficient way in terms of both cost and electricity supply.

3.5 Question A5: *Is it reasonable to include safeguards? Consider*

i. *A limit on overall number of new installations in a given period*

ii. *A limit on new installed capacity in a given period*

iii. *Whether priority should be given to particular groups; for example, people in fuel poverty*

i. *A limit on overall number of new installations in a given period*

ii. *A limit on new installed capacity in a given period*

We believe that initially there should be no caps on the system, whether in terms of electricity output, number of installations or technology.

However, should the uptake of eligible generating technology prove to be far greater than anticipated, the financial rewards associated with the system could be reviewed at a later date. The ethos of introducing feed-in tariffs should be one of encouraging investment and capacity building in technology areas that are not yet commercially competitive with incumbent technologies, but which offer significant advantages in terms of energy efficiency, carbon savings, energy security and economic growth. Once the market has been adequately stimulated to provide adequate demand and economies of scale, such external support may not be required and can be revisited and adjusted accordingly.

iii. *Whether priority should be given to particular groups; for example, people in fuel poverty*

The system should be designed to be as simple as possible, with minimal regulatory burden, particularly when one considers that it will impact many at the household level. With this in mind, differentiating between different economic social groups, such as those in fuel poverty, is likely to add complication to the system and detract from its ability to deliver cost effective energy solutions.

3.6 Question A6: 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:

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

i. The basis for setting the number of tariffs and their level

Fuel Cells UK believe that the level of any feed-in tariff should be based, in part, on the electrical efficiency of the device. Demand for heat varies throughout the year and recycling heat to reduce waste poses a genuine challenge. CHP units with high electrical efficiencies, in the region of 45% (a nominal 1:1 heat to power ratio in an 85% efficient system), tend to produce ample heat for most household needs. Any excess generation will tend to be in the form of electricity which can easily be fed back into the grid and sold on the energy market at minimum loss, compared with the challenges associated with recycling excess heat. Designing the system to support devices with high electrical efficiency will minimise waste and hence ensure that the infrastructure that develops as a result of support from feed-in tariffs, is one that maximises efficiency in terms of carbon savings, resources and, ultimately, cost.

iii. How long installations should receive the relevant tariff

iv. How, when and on what basis we would vary the tariffs for new installations

We feel that there should be flexibility built into any scheme to allow the level of tariffs to be reviewed and adjusted according to the needs of the market. See our response to Question A5 (i and ii). We support the principle that feed-in tariffs are most effective when they are introduced at a relatively high level initially and reduce progressively over time as experience and scale effects deliver economies. Initial feed-in tariff structures should recognise the state of development of a particular technology (and its potential for future carbon reductions rather than those delivered today) and different levels of support be provided accordingly.

3.7 Question A7: What arrangements should apply to

- i. Currently existing small-scale renewable electricity installations;**
- ii. Installations which enter into operation before feed-in tariffs come into effect**

We believe that feed-in tariffs are effective at encouraging the deployment of new technologies. Correspondingly, only installations put in place after the announcement of the introduction of feed-in tariffs should be eligible for inclusion in any new scheme. This would allow the maximum level of support to be targeted at deployment of new systems.

3.8 Question A9: 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:

- i. Who the payments should be administered by**
- ii. How payments should be monitored and regulated**
- iii. How the overall costs of feed-in tariffs should be disbursed and among which organisations**
- iv. How administrative costs should be funded**
- v. How frequently payments should be made to generators and how frequently costs should be disbursed**
- vi. Who should meet charges by the DNO for use of their system for exported energy**

i. Who the payments should be administered by

In so far as it is possible, parallels should be drawn between the existing RO administrative system and any feed-in tariff system that is introduced. It would therefore seem logical for Ofgem to administer the system.

ii. How payments should be monitored and regulated

Although we do not have a clear steer on the best method for monitoring and regulating payments at this time, clear certification of units will be essential to determine eligibility of technologies for inclusion and to help establish some standard information for power production.

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

Our primary concern is that the structure of the system should be kept as simple as possible. We have no firm view on exactly how costs should be disbursed, but it would seem logical that they should be disbursed in a fair and proportionate manner to avoid any distortions in the market as a result of the uptake of eligible generating technology.

iv. How administrative costs should be funded

There are likely to be a number of options for this; however, it is only fair that, in so far as it is possible, it is the parties involved in the scheme who bear the cost of administration. That is the suppliers and generators.

v. How frequently payments should be made to generators and how frequently costs should be disbursed

In so far as possible there should be a synergy between any scheme that is introduced and existing schemes. Payments should, therefore, be on the same basis as for the industry at present, possibly quarterly. More frequent payments are likely to increase costs with increased billing activity. Payments that are spread too far apart are likely to increase costs with more detailed auditing requirements.

vi. Who should meet charges by the DNO for use of their system for exported energy

It is important that the system is kept simple for eligible generators, since this is one of the key reasons for introducing feed-in tariffs rather than the existing RO for small-scale electricity production. Therefore, any extra charges that arise from different circumstances, such as charges by the DNO for use of their grid system, should be taken on by the supplier / funding organisation, factored into the overall costs of financing the system and disbursed amongst all suppliers/ funding organisations.