fuel cells UK

FUEL CELLS UK INDUSTRY ASSOCIATION
DRAFT RESPONSE TO

"The regulatory implications of domestic-scale microgeneration. A consultation document", Ofgem, April 2005

July 2005

SUMMARY

- Simplicity and a "one-stop shop" is of paramount importance for the success of the microgeneration industry, particularly in the household and other "non-expert" sectors.

- Marginal increases in regulation will promote greater competition – customers can compete with energy suppliers to supply their own and others' energy, but not unless regulatory measures are put in place to allow them to do so.

- In specific terms, we support the view that the following steps should be taken by Ofgem to level the playing field for customers installing microgeneration:

  - A license **obligation on DNOs, that connection terms must comply with the Electricity Safety, Quality and Continuity Regulations 2002**

  - A license **obligation on Suppliers to offer and publish terms for purchasing exported power** from households**;**

  - **A requirement for DNOs to notify the Supplier** of a microgeneration installation once it has received statutory notification from the customer;

  - **The removal of the requirement for Schedule 7 compliant metering for domestic scale renewable microgeneration wishing to claim ROCs**. This would avoid the need to undertake compliance testing for DC meters;

  - Relax the interpretation of Schedule 7 to **allow for net metering (backwards running meters) from 2006 until 2012** whilst the market becomes established, with a clear programme of work to develop changes to the settlement system for introduction in 2012;

  - **Establish whether DNOs are properly incentivised** to optimise the choice of assets and other solutions to meet future load growth;

INTRODUCTION

1. The Fuel Cells UK Industry Association is an industry-led body that represents the interests of companies active along the fuel cell supply chain, from universities, specialist materials companies and fuel suppliers to system integrators and private individuals, many of whom have a strong interest in the development of the microgeneration sector.

2. The Association provides a single voice for the fuel cells industry to interact with Government, opinion formers and the general public on most the commercialisation of fuel cells including, where appropriate, the technical and policy aspects of the production by consumers of their own heat and power.

3. The Association welcomes the opportunity to respond to the consultation especially Ofgem's recognition that the existing framework was not created with domestic-scale microgeneration in mind. The consultation is particularly timely, given the stage of progress in the development of the Microgeneration Strategy.

4. This response builds on a draft prepared by the Micropower Council, developed to reflect the views of the Fuel Cells UK Industry Association. We are grateful to the Micropower Council for sharing its material with us, and welcome the opportunity to submit a response to the consultation document.

GENERAL COMMENTS

Heat-led versus heat *and* power

5. The footnote five on page 1 of the consultation document implies that CHP, in virtually all its modalities, is heat-lead. Since that is not always the case, particularly for high-efficiency fuel cell-based DCHP, we would advise that the statement or the footnote is removed.

Simplicity and non-expert users

6. The microgeneration industry still faces serious regulatory barriers. These are substantially associated with the "non-expert" nature of householders and small businesses in respect of their knowledge of, and willingness to engage with the electricity industry on matters of detail concerning the various rules and regulations that apply. The need for simplicity and, ideally, a "one stop shop" is therefore paramount – a householder or small business will be put off by the slightest complexity. This guiding principle needs to apply to all aspects of public policy affecting microgeneration, including the electricity industry's regulatory and contractual framework. Currently, the arrangements for network connection, metering, notification, export reward and, where applicable the claim of Renewable Obligation Certificates are unworkable for all but the most determined consumer.

Markets versus regulation

7. Ofgem indicates that an objective of the consultation exercise is to address microgeneration issues (Summary, last point), ***without extending the scope of regulation or materially increasing the regulatory burden on supply on distribution businesses.***

8. The Association does not agree that this objective is valid. Ofgem's primary statutory duty is not to lessen regulatory scope but to protect the interest of consumers, wherever possible by promoting the use of competition. In some cases it is necessary to extend regulation in order to further the protection of consumers, or indeed the promotion of competition. We consider that Ofgem can, and should, protect the interests of consumers by extending the scope of regulation where markets themselves cannot do so. Microgeneration is an example of where this is appropriate.

9. In specific terms, customers who install microgeneration in the early years of the market's development are competing against considerable sunk costs and institutional barriers in the form of the Settlement rules, metering Codes Of Practice, existing network topology and the underlying basis for distribution company reward. Together, these constitute significant entry barriers. A measured extension of regulation is entirely appropriate to address these; it should not therefore be artificially avoided simply because of a stated intent to reduce regulation, without an eye on the wider policy, or in this instance, statutory, objectives.

10. Moreover, there are examples we cover in the detail given below where a marginal extension in the scope of regulation is necessary to increase competition – by allowing householders to compete both for their own energy supply, and for the supply of others.

Uncertainty over market development and risk of under / over reward

11. The speed at which the microgeneration industry develops in the future is uncertain. The Association understands Ofgem's concern that it would not want to face a situation in a few years' time where the industry had grown substantially leaving behind a considerable challenge in ensuring there is proper data capture and appropriate scope for competition and cost reflectivity. Much of its approach appears to be influenced by this concern. There appears to be a concern that microgeneration may be over-rewarded if too lax a regulatory framework applies at the outset.

12. In pragmatic terms, any scope for over-reward for microgeneration customers that results from the suggested measures set out in detail below is likely to be significantly smaller than the under-reward currently experienced. This is particularly the case if, as we suggest, a clear programme of work is put in place to undertake a proper review and "tighten up" any initial relaxations at a fixed point in time in the future.

Emphasis

13. The Association is concerned by some of the underlying assumptions inherent in the consultation as follows:

    - ***Propensity to export power:*** We do not agree with Ofgem's assertion that electricity will "usually" be consumed on site. In its footnote, Ofgem acknowledges that some microgeneration equipment is designed only to produce a small excess. In some cases this is only true because design decisions of this nature have been taken for the somewhat circular reason that it is difficult to obtain reasonable reward for exported power! Also, in the example of microCHP, as electrical efficiencies increase, the levels of exported power increase. Indeed, for some fuel cell technologies, the inability

to obtain export reward, somewhat perversely given their carbon saving impact, means that the customer's energy bills can actually increase. This is because, for the same overall level of energy efficiency (in some cases >90%), they may need to increase gas consumption to meet the same heat demand – the extra gas being used to produce power that displaces grid-based generation.

- ***Distribution issues:*** Ofgem correctly raises the importance of supply-related issues, and we welcome this, particularly given the difficulties experienced by the Microgeneration Workstream in engaging electricity Suppliers so far. However, the distribution issues discussed in the consultation relate primarily to the distribution issues surrounding interface with Suppliers. We believe there is a more important consideration – the basis of DNO reward provides strong incentives towards asset-based solutions to future network development. As a result, when faced with load growth scenarios, DNOs are poorly incentivised to consider a mix of assets and incentives for energy efficiency or microgeneration. This can and should be addressed by Ofgem with academic research and a wide-ranging debate in the industry well ahead of the next distribution price control review and use of system charging review.

NETWORK CONNECTION

The problem

14. Despite having the legal ability to connect microgeneration without seeking prior permission from DNOs[1], and a detailed technical connection standard[2], many of the contracts currently in place between domestic consumers and their suppliers still require such permission to be granted.

15. Although the industry agrees that change is required here, the process for effecting such change is genuinely complex – the contract between a customer, their supplier and their DNO is a commercial arrangement between these three parties, and subject only to limited regulatory purview. Class changes to such agreements would require all Suppliers to agree such changes with every DNO in whose licensed area the Supplier operates. As such, a large matrix of contracts would require change and would inevitably be subject to a degree of bespoke negotiation.

16. Progress in this area has been exceptionally slow with Suppliers and DNOs wanting to await wider changes to customer agreements and, agreement to a class change procedure before making changes specific to microgeneration.

17. These wider changes are needed to allow the contractual framework in the industry properly to reflect the industry's structure following the Utilities Act 2000, in which Distribution and Supply became separate licensed activities, performed by different legal entities.

18. The absence of any progress in this area is a considerable frustration for companies in the microgeneration sector, who consider it unacceptable that DNOs and Suppliers continue to place contractual restrictions on customers that

[1] Regulation 22 of the Electricity Safety, Quality and Continuity Regulations 2002
[2] Engineering Recommendation G83/1

prevent them connecting microgeneration without prior permission - something the law has permitted them to do for over three years.

Comments on Ofgem's proposed solution

19. The Association is concerned that Ofgem's proposal to resolve this through the Distribution Commercial Forum will simply result in considerable further delay and unnecessary debate. The DGCG's Microgeneration Workstream identified the necessary (uncontroversial) changes almost three years ago. Given the lack of progress so far, we have little confidence that starting the debate afresh in a new forum will result in anything other than considerable further delay. We would question the compatibility of more rapid progress in this with both Ofgem's duty to protect the interests of consumers and that of DNOs to facilitate competition in generation.

Proposed solution

20. **The Association supports the view that the preferred solution is for Ofgem to set a clear deadline** of April 2006 for DNOs and Suppliers to resolve this. If this is not achieved, Ofgem should **introduce a license duty on DNOs that their terms for connection must at all times conform to the requirements of the Electricity Safety, Quality and Continuity Regulations 2002.**

METERING

The problem

21. There are three main problems associated with metering:

    a) **Measuring exported energy -** The Balancing and Settlement Code requires that export units be measured if a Supplier wishes to be able to credit the energy with the Settlements system. The most common anticipated solution to this is either the fitting of an additional export meter, or the replacement of the existing meter with one capable of measuring imports and exports independently.

    b) **Backward-running meters -** Ofgem's interpretation is that backward running meters are in breach of Schedule 7 of the Electricity Act, because the meter can no longer accurately record the number of units supplied to the customer.

    c) **Process for changing meters** – Other than the sale of a microgenerator by an Electricity Supplier to one of its existing customers, it is currently very difficult for meter changes to be arranged for the same time as microgeneration installation, and even more difficult for the microgeneration installer (even if suitably trained and qualified) to perform the necessary work and avoid additional call-out costs.

22. Ofgem has not proposed any significant changes to the metering Codes of Practice, Balancing and Settlement Code, or other industry documentation to address any of these issues directly. Instead, Ofgem appears to wish to rely on Suppliers' obligations under Schedule 7 of the Electricity Act to ensure that any metering system is appropriate. In support of this, it argues that whilst a simultaneous microgeneration installation / meter change may not always be possible, it should be "relatively prompt" (para 10.30).

23. Moreover, Ofgem argues that if the microgeneration installation is such that the customer and the provider of the microgeneration equipment believes that the value of any expected exports are likely to be sufficiently small so as not to justify the extra expense associated with a meter change, it is acceptable not to change the meter if the existing one has a "backstop".

Comments on Ofgem's proposed solution(s)

24. Ofgem's overriding point appears to be a reliance on Suppliers' obligations under Schedule 7 of the Electricity Act – that it is the Supplier's responsibility to ensure appropriate metering. There are therefore three scenarios that could be envisaged:

    a) Export reward sufficient to cover meter change costs – under these circumstances, and with the implicit assumption that an agreement exists with a Supplier to purchase exported units, the view appears to be that the customer / installer have a suitable incentive to change the meter in any event.

    b) Export reward not sufficient to cover meter change costs – under these circumstances what happens next depends on the type of meter already in existence:

    - Where a backstop is fitted, no meter change is required; any exported units cannot be recognised in the Settlement system and are therefore lost.

    - Where a backward-running meter exists, Ofgem considers that the Supplier is under an obligation to change the meter. Ofgem considers that whether a charge should be levied for this or not is a contractual, not a regulatory, matter. It points out (para 10.32) that it is open to providers of microgeneration equipment to negotiate arrangements with suppliers for the installation of import / export metering. It could also be argued that, as a meter change has to take place under this scenario, it would make little sense to change the meter for anything other than one that has the capacity to register exported units – the incremental costs of doing so are small, and it opens the customers options in the future to sell the exported electricity.

25. Ofgem has correctly identified that the only circumstances in which a "one stop shop" can be achieved is one where the customer's existing electricity supplier is involved in some way in the sale and installation process of a microgeneration unit. This is not only a serious barrier to the uptake of microgeneration technologies, it is also contrary to the protection of consumers' interests by promoting competition – microgeneration providers (whether themselves affiliated to electricity suppliers or not) cannot effectively compete against the incumbent supplier.

Proposed solution

26. We believe that there are two steps that need to be taken to resolve this:

    a) An obligation should be introduced on licensed suppliers to offer and publish terms for exported power. Such an obligation will mean that it is in the Supplier's best interests to ensure that appropriate metering is in place and, more importantly, Suppliers will become fully engaged in making the

necessary changes to the Master Registration Agreement and any necessary Codes of Practice to ensure that a "one stop shop" is possible. There are also other reasons, explained elsewhere, for such an obligation to be introduced.

b) Giving sufficient advanced notice (we would suggest with effect from 1 April 2007), the minimum standard for all replacement meters should be import / export. This should be introduced as a requirement within Schedule 7.

EXPORT REWARD

The problem

27. It is not currently cost effective for Suppliers to process and trade small quantities of exported energy. Consequently, those that do will tend either to offer a very low value of reward for metered exports, or operate with such small volumes of customers that they are prepared to withstand a small loss or opportunity cost for other reasons.

28. This is a serious impediment to the microgeneration industry, particularly those developing larger microgeneration equipment, where a more significant proportion of the power is exported. In some cases, particularly microCHP systems with a relatively high electrical efficiency (>20%) within an overall energy efficiency envelope of >90%, customers will actually see a rise in their bills as a result of installing microgeneration. This is a perverse outcome, given that this extra power gives rise to a substantial reduction in the combined carbon footprint of both the customer premises and the power station whose output it displaces.

29. The industry has for some time been arguing that the reason this is the case is due to the design of the settlement rules. In turn these rules are difficult to change to make them more suitable for large volumes of customers to trade small quantities of energy. This is because the expertise and commercial interest of the large energy suppliers are essential factors in getting the trading rules changed. Moreover, the Electricity Suppliers have considerable democratic influence over the trading rules, particularly for retail supply and other aspects associated with the interface with customers. Other than Ofgem and Energywatch, other industry stakeholders have little interest in the detail of some of these areas of the settlement rules.

30. The settlement rules currently constitute an institutional barrier to microgeneration customers being fairly rewarded for exported power. Moreover, an argument has also been made that the market power of the large energy Suppliers provides them with poor incentives to offer terms to purchase relatively small volumes of exported power from domestic customers. The industry's proposed solution, widely supported by other stakeholders, including the Energy Saving Trust and a considerable number of Members of Parliament, is for Suppliers to be obliged by their licenses to offer terms for the purchase of electricity from domestic customers. This is similar in nature to an existing obligation on them to offer terms for supply.

31. Ofgem's consultation does not really deal with the issue of export reward, the details of the settlement system that currently make it difficult for Suppliers to receive any noticeable value for exports, or the issues of market power referred to above.

32. Moreover, Ofgem specifically rules out the industry's proposed first step towards a solution – namely an obligation on Energy Suppliers to offer terms to domestic customers who wish to export electricity from microgeneration.

Comments on Ofgem's view

33. Ofgem's view that an export terms obligation is not appropriate appears to be driven from an underlying principle that the regulatory burden should not be extended under any circumstances.

34. We believe this should be set in the context of Ofgem's statutory duty to protect the interests of consumers, wherever appropriate by promoting competition. In the case of microgeneration, we believe that a modest extension of regulation in this form is entirely appropriate, because neither consumer interests are properly protected, nor is competition effectively promoted under the current circumstances.

35. The changes to the settlement rules that are needed for the true economic value of microgeneration to be reflected are urgently needed, particularly in the early years of market development, when the prices of microgeneration technologies are likely to be higher.

36. In the absence of obligation, the problem is circular – Suppliers are needed to change the settlement rules; they will only do so if they see a commercial benefit as a result; the microgeneration sector is too small at present for this commercial benefit to exist; they will not engage to change the rules.

37. Moreover, once Suppliers have properly engaged, we believe that many of the metering issues discussed above will also get resolved.

38. We also believe that, even once an obligation of this nature is introduced, it will be some considerable time before the necessary changes are brought forward that allow microgeneration customers to receive an appropriate level of reward for their exported power. Ofgem has consistently argued that so-called "net" metering, where meters run backwards when power is being exported, is not appropriate or is incompatible with the structure of the UK electricity supply industry. This view appears to be driven from a concern that net metering may lead to a risk that microgeneration customers are over-rewarded for their exported power.

39. We understand this concern, but Ofgem's consultation, together with a considerable amount of work done in the DGCG's Microgeneration Workstream, suggests that the extent to which microgeneration will continue to be under-rewarded is considerably less than the likely marginal over-reward that net metering may lead to. Moreover, its introduction would mean that microgeneration customers would receive some recompense for exported power during the intervening period whilst changes to settlement rules and other industry documentation takes place. It would also be a valuable boost to the industry in the context of the government's desire to see microgeneration make a significant contribution to its overall energy policy goals.

Proposed solution

40. We therefore propose three steps, two of which have been discussed earlier:

a) Ofgem should amend the Supply license to oblige Suppliers to offer to enter into a contract for the purchase of microgeneration output.

b) Ofgem should give a pre-defined date at which the de-minimis standard for all replacement meters is import / export.

c) Ofgem should relax the interpretation of Schedule 7 to **allow for net metering (backwards running meters) from 2006 until 2012** whilst the market becomes established, with a clear programme of work to develop changes to the settlement system for introduction in 2012.

ROCs

The problem

41. There are a number of concerns relating to the ability of renewable microgeneration customers to benefit from the value of ROCs. Many of these relate to changes needed in primary legislation, and we recognise that such matters are not directly within Ofgem's regulatory purview. We have covered these in our recent response to the DTI consultation on the Review of the Renewables Obligation, attached to this response for further background.

42. There are, however, two areas within Ofgem's remit that are worth commenting on here:

a) *Meter reading requirements*

Ofgem refers (para 7,13) to LC17 of the Supply license, which imposes an obligation on licensed electricity suppliers to read non-half-hourly meters once every two years. This is an onerous requirement for ROC meters, where for domestic customers there is a significant rounding error (500kWh < 1 ROC < 1499 kWh). It is only technically required because of the need for a sale and buy-back agreement, which effectively adds all of the renewable generated output to the "supply" of the property. It is onerous because it adds a further meter read cost, which may not necessarily be by the same Supplier or Meter Operator as for the off-take contract. This additional cost (say £10), is a significant proportion of the worth of the ROCs available – typically one ROC worth up to £45.

In addition, there are also difficulties being experienced in obtaining the required meter readings in the currently prescribed time window, which is +/- 1 day for meters read monthly and +/- 5 days for those annually read.

b) *Schedule 7 compliance & metering requirements in general*

The findings of the DGCG's Workstream 4 indicated that there are wider issues than just the time window for submission of meter reading data which affects the issuing of ROCs. The onerous administration burden of collecting and submitting data from individual microgeneration stations could potentially outweigh the benefits of the schemes.

Proposed solutions

43. We believe there are three steps that could resolve these issues:

a) ***An automatic right to use estimation***, determined by specific rules, where the generator fails to meet the time window. This should be set to include a minimum threshold of all small generators and domestic customers which have a likely error in estimation that is smaller than the ROC rounding rules. In order to protect the integrity of the ROC scheme, the use of estimations would need to be subject to a limit on the number of times this can be done, as well as being produced using a prescribed method. The benefit of this change would reduce the requirement to apply to Ofgem to use an estimate during the narrow time window when the data is being collected and submitted to Ofgem, and thus reduce the risk of ROCs not being issued. This would not need to change the requirement of meter data or primary legislation, only a change to the RO Order.

   The main advantage to implementing this approach to streamlining the data requirements is by reducing the administration burdens, thus benefiting Ofgem as well as operators/suppliers. The risks of suppliers not receiving ROCs for a proportion of microgenerators is also reduced, along with the subsequent decrease in participating in the scheme, passing risk over to customers or discounting the price they offer for electricity generated. There are other reasons for this approach to be considered fully. The method allows the advantage of the use of a prescribed estimation, over a possible estimation made by a customer not wishing to miss the time window, but claiming that their figure is a true reading. And with consideration to the rounding rule of ROCs the estimations are likely not to have a significant impact.

b) ***Type-certification*** We believe there is a strong case for a type-certification scheme for the smallest of microgeneration technologies, properly underpinned by appropriate product and installation standards. This would remove all of the administrative considerations associated with metering and meter reads. Some who do not favour this suggestion argue that it is essential to meter the generator output to ensure there is an accurate record of renewable energy generated. We do not accept this –such a scheme based on large numbers of identical smaller generators with output variability less than the rounding errors of the ROC scheme would lead to an improvement in the system compared to the current situation. We would, however accept that some form of check is performed to ensure that the microgeneration equipment continues to produce the assumed amount of power over its lifetime, perhaps by building this into the equipment's maintenance cycle as a product / installation / servicing standard. This approach would allow for average annual values for certain microgenerators to be used, and would offer the greatest simplification to the ROC issuing process

   This alternative approach offers the advantages of the relatively quick and easy implementation, and perhaps more importantly, time to test the approach and progress work on the annual average option. We therefore recommend that further urgent work is carried out to collect additional field trial data for wind, solar and other renewables (e.g. biofuels and biomass systems), to identify legislative changes and required detailed rules for these options, and to assess the possibility of using simulation data.