PJ/SA

15 August 2003

Mr G Evans
Technical Directorate
Ofgem
9 Millbank
London
SW1P 3GE

Dear Gareth

Incentives for Innovation and Registered Power Zones

CE Electric UK Funding Company (CE) is the UK parent company of Northern Electric Distribution Ltd (NEDL) and Yorkshire Electricity Distribution plc (YEDL). The views expressed in this letter and in the attached paper represent the response of CE, NEDL and YEDL to Ofgem publication *Innovation and registered power zones: Discussion paper* (July 2003).

We welcome the broad thrust of the proposals, that distributors should be encouraged to seek out new ways better to serve our customers.

I attach detailed responses to each of your specific questions. The central plank of our argument is that we strongly support the concept of registered power zones (RPZs), and wish to introduce some in our service areas, but feel that the proposed framework is unduly restrictive. Specifically:

- requiring all industry, regulatory and technical standards to be maintained eliminates the scope for novel network designs, making it highly unlikely that we will achieve the aim of requiring fewer assets for a given output; and
- failing to protect against the downside risk of requiring additional investment simply to maintain a connection, should novel techniques fail, makes it highly unlikely that distributors will offer connections at significantly lower prices.

Other key issues are:

- innovation costs should be funded in full, if Ofgem wish us to share the outcome;
- we support the principle of establishing a good practice framework for innovation, and also the proposal to integrate this with the ARM survey;
- the administrative processes proposed for the incentives for innovation (IFI) and RPZ frameworks seem a little too bureaucratic. We suggest that it needs simplifying and to have increased flexibility to ensure that innovation is not stifled;

- each distributor should be able to propose as many initiatives, of whatever size, that he feels can be justified, with control applied through Ofgem's approval of registration;
- it will be more practical to apply a single premium to all RPZs. Total returns in the region of twice the 'standard' rate should be available, as for the NGT capacity incentive scheme, although this might be insufficient to mitigate some of the commercial risks associated with initiatives;
- we suggest that the differential return on investment and the £/MW driver for RPZs each apply for five years after commissioning. After this point, the investment would be included in the general rate base, and the income considered with the general mass of customers; and
- we suggest that funding for RPZs should be provided by those benefiting from the initiatives. To the degree that RPZs are genuinely test beds for application to the wider network, costs should be shared across the wider customer base. To the degree that RPZs provide direct benefits to the users connected therein, that smaller group should fund its costs.

I trust you find this helpful. We look forward to playing our part in this process. Specifically, we would welcome the opportunity to discuss these issues, and our proposals for bringing forward innovation in distribution, with you face to face.

Yours sincerely

Phil Jones
Director of Strategy and Investment

INNOVATION AND REGISTERED POWER ZONES: DISCUSSION PAPER (JULY 2003).

The response from CE Electric UK Funding Company (CE,) Northern Electric Distribution Ltd (NEDL) and Yorkshire Electricity Distribution plc (YEDL)

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Intellectual Property Question

1. *Do you have any specific views on the management of intellectual property that may be created through the IFI and RPZ initiatives?*

It is hard to see why any company should invest significant effort and funds into untried techniques unless it can see a future return. Retaining IPR will often be a key part of that, so companies must be allowed to retain IPR on the projects they sponsor.

Further, without retaining IPR, there is no incentive for distributors to lead in developing novel techniques. They current implicit incentive is retained: i.e. the company might as well wait for some more progressive firm to take the risk, then adopt the (published) technique once proven.

Innovation Funding Incentive (IFI) Questions

2. *Do you support Ofgem's rationale for introducing the IFI? Do you consider the IFI to be aligned with consumers' interests?*

We welcome the IFI, support Ofgem's rationale, and consider it to be in the interests of all stakeholders, including customers and distributors to develop a framework that encourages the identification, development, demonstration and adoption of innovative techniques.

Much has been stated about the effectiveness of the regulatory framework to date, in terms of delivery of improved efficiency within the sector. It is certainly unnecessary to replay it further at this point, except to register our agreement with that position. That said, we recognise that although well suited to **optimisation** of mainstream distribution activity the existing arrangements are (unintentionally) discouraging of effective innovation. Hence, the rationale for a limited, objectively assessed allowance for activities that go beyond optimisation to introduce new techniques and approaches is sound.

3. *What are your views about the use of the DTI's R&D Scoreboard as a yardstick in this context? It would be useful if distributors could quantify their company's current R&D Intensity and offer their views on an appropriate level for the next DPCR period.*

The magnitude of the R&D expenditure of an organisation is largely dependent upon the extent and pace of change that is considered to be necessary rather than its turnover. In order to establish a suitable level of funding for distributor R&D it may be a to develop a

yardstick based on other utilities where significant change has taken place, possibly referencing European utilities. We accept that some form of yardstick would be required to establish best practise R&D over time, but suggest that initially IFI proposals are considered on their merits and not subjected to an artificial cap. The initial years of the IFI could be used to establish a yardstick specifically for UK utility companies.

Until now, there has not been significant focus on this indicator within companies. Therefore, we expect there to be a need to improve the definitions and their interpretations as reported through regulatory accounts. With that in mind, we suggest that comparisons between organisations should be treated with considerable caution.

That notwithstanding, we have carried out a preliminary assessment of our current intensity and would estimate it to be in the order of 0.1%-0.2% . We consider this to be lower than would be expected of an industry where a company that invested of the order of £100M per annum (*ca* 30-35% of turnover) in its asset base would not be unusual. Given this level of expenditure in the asset base, we would suggest that something that approached, say, 1% might be a more appropriate intensity.

4. *Do you think the three category approach (A, B and C) and treatment of allowed funding is a reasonable balance in the interests of all parties? What should the value be of the proposed factors?*

We recognise the issue of consistency with NGC, and therefore accept that truly 'blue sky' research (e.g. new insulating materials; the development of superconductors) should be funded by companies until proven, with the value protected by patent and licensing rights.

In the other categories, we believe that something that is deemed to be necessary and efficient deserves to be fully funded through DUoS. These, more practical, developments will benefit customers immediately, so the funding should be made available. The thrust of the IFI must be to change the current arrangements such that good ideas are rapidly turned into good practice.

5. *What are your views on establishing good practice for the management of innovation and could such a framework be adopted commonly across the industry?*

We welcome initiatives that encourage the dissemination of good practice across the industry. Indeed, we believe that the full potential of the ARM survey can be realised only by

sharing those aspects deemed to be good practice with all participants. We are of the view that there needs to be flexibility in the management process and that it would be essential that the process enables both short term connection project based initiatives in addition to longer term, more strategic studies. Without a capability for the frameworks to offer flexibility and responsiveness we believe that innovation will be stifled.

The ARM survey seems to us to be the best vehicle to identify (and then, as noted above, disseminate) good practice in managing innovation across distributors. The DGCG and its sub-groups together with the distributors themselves are best placed to disseminate the detailed findings of the innovative technique or solution.

We recognise that it may be difficult, at least initially, to define what makes good practice. We therefore support the work that is planned in Technical Steering Group (TSG) to work towards an industry position on effective innovation management. There would be merit in reviewing the assessment process used within DTI/FES, the EA Technology STP programme and similar establishments, which the TSG work will likely bring. Without such a framework, we would recognise Ofgem's difficulty in applying any funding mechanism, such as IFI.

With such a framework in place, or perhaps in draft, we are currently minded to suggest that an open audit (perhaps voluntary at least in the first instance), could be carried out as part of the TSG programme. The findings could be published and reviewed by a group such as TSG, who should be able to identify 'best of breed' amongst distributors. That review group might even be able to identify some valuable next steps that even the best might take.

We currently are of the view that such a process would benefit from input from outside sector, to augment the valuable experience that has been gained by industry participants. To that end, we would encourage Ofgem and the TSG to seek a broad-based input in the formative stages.

6. *Should the IFI percentage cap be varied between companies according to performance or some other criteria?*

We accept the proposal that the actual amounts allowed to be passed through to customers should be subject to audit. Similarly, we recognise the desire to reward performance, but believe that at this stage (and with the relatively small amounts of funding involved) differential IFI caps per company would unduly complicate the process.

Registered Power Zone (RPZ) Questions

7. *Do you share Ofgem's view that DG is likely to be connected more efficiently if innovation and new solutions/technologies are employed?*

Yes. We believe there are no fundamental technical barriers to connecting DG, as the techniques to connect any conceivable generation set exist, if currently only at a conceptual level. It is the development and deployment of such techniques that is now required. However, the costs of that current technology are largely driven by the skill and experience in application of that technology, and are claimed to be too high for developers to bring forward sufficient projects to satisfy Government aspirations.

We therefore agree that new technologies and techniques are required, and that incentives are required to encourage us to manage the technical, commercial and regulatory risks associated with the development of new, lower-cost solutions. What is needed is the application of lots of good ideas to real networks in order to prove that they can be made to work. As this process accelerates, it would be expected that the connection cost per MW would reduce, thus facilitating the achievement of the Government's targets.

8. *Do you have a view regarding the annual RPZ MW capacity and numbers of projects that might be appropriate per distributor licensee per year, and whether the number should be allocated by the suggested gold, silver and bronze categories?*

The overall cap of 50MW and 3 projects seems too low. One key potential area for RPZs currently being considered in NEDL/YEDL is in 'collection networks' that would facilitate connection of clusters of new generation projects e.g. groups of windfarms. The aggregate capacity of these would easily exceed 50 MW, and could pass 100 MW.

Indeed, any cap seems an artificial restriction on something proposed to encourage innovation and risk-taking. We believe that this initiative will, in practice, be self-limiting, as the risk exposure and management overhead of registering a power zone will discourage frivolous application. There needs to be some clarity regarding whether RPZs are being targeted for demonstration nationally or within each distributor. We are of the view that some demonstration is required nationally (although this would act to reduce the number of RPZs) to avoid undue duplication, however there does need to be flexibility to enable follow-on demonstration projects within each distributor. It is only when innovative techniques become

an integral part of a distributor's design and operational practice that the ultimate benefits will be delivered.

A rapid take up could be seen to be a 'nice problem to have' and might actually hasten the time when the process is not seen as innovative, but rather part of mainstream development. We would anticipate that the process of registration would require an assessment of the 'innovative features' of that proposal. Merely repeating something that has been applied a large number of times presumably wouldn't qualify anyway.

There is a stronger reason to support a higher, or even unlimited, number of RPZs: securing senior management commitment to the process of innovation, particularly for DG. We believe that achieving 'managerial critical mass' will be a vital factor in mobilising effective innovation, enabling it to compete with other important issues for management attention. We would be concerned that an artificial limit might threaten this desirable situation.

9. *Should the premium return be common for all RPZs or should it be related to the innovative content of the project? If the latter is considered appropriate, is the gold, silver, and bronze approach helpful, or can you suggest a better alternative?*

It is our view that the return should be based on the degree of risk associated with the project. It could be that an opportunity presents itself that has relatively low technical risk hence requiring only a low level of technical innovation, but has a high degree of commercial risk. While we recognise the arguments behind banding projects, we believe it that it could be difficult in practice to quantify the degree of innovation or risk and hence differentiate between gold and silver, i.e. between 'high' and 'medium' 'innovation dependence' and that it would be more practical to apply a consistent premium to all qualifying projects.

We therefore suggest that the 'standard' £/MW rate be applied to 'unregistered' generation, with a single premium rate applied to 'registered' generation. As we gain experience with the scheme, and the difference between the bands becomes clearer, we should revisit this issue.

One of the potential issues associated with this approach is that the degree of risk on a particular project may be disproportionately large compared to the DG connection and hence the incentive reward. In some circumstances, we might take on significant risk for relatively small generators. It may be possible to manage such situations via a bespoke settlement where it can be justified.

10. *Is it practical to base financial rewards on a project meeting or failing to meet performance objectives?*

In any demonstration process there is the possibility that the technique will not be a successful as that indicated in the development phases – indeed if there was no risk involved the technique should be part of a distributor's normal 'toolkit'. Where a technique is successful we suggest a measure based upon MWh capability made available. This will encourage distributors to seek out ways not just to connect generation, but also to maximise its export capacity over time.

However there also needs to be a process for rewarding those projects that prove to be unsuccessful provided that the distributor is able to demonstrate that he made every effort to ensure success and that there were external factors that proved to be insurmountable. In these cases we suggest that an appropriate reward should be made available had the project been successful.

We are concerned that the process of innovation will, by definition, involve some risk taking that might render excellently managed projects 'failed' against some original objectives. We believe it is important that we do not discourage riskier aspects of RPZ development in the earlier years; we could imagine a scenario where management may elect to discard a potential incremental performance enhancement that (in its early development phase) might have an asymmetric risk/return profile.

Hence, on balance, we would advocate a framework where the outcomes are tracked and reflected in effective measures and, in turn, where the rewards are linked to them. This would be the default position. In support of that, we would look to have a 'by exception' route whereby performance risks can be considered and assessed. We would not expect this to be an unduly arduous process, as it ought to fall naturally out of the normal routine of post-project appraisal that would, presumably, be required to support the company's assessment of their income allowance in respect of RPZs.

11. *Do you think a mechanism relying on an enhanced £/MW driver to provide a premium return is appropriate, and if not what alternative could be considered?*

As noted in our response to question 10, we support this approach, albeit modified to operate on MWh potential rather than simple MW. As indicated in our response to Question 9, we believe that there may be occasions where a simple driver is not an appropriate proxy for the

risk incurred, and in such situations there should be scope for securing a more appropriate reward.

A particular concern arises where, despite the best endeavours of all involved, an innovative solution fails to achieve the desired outcome. This is discussed in more detail in our response to question 16.

If we cannot provide safeguards, it is highly unlikely that distributors will offer connections at significantly lower prices. Of course, if we cannot relax technical standards, then distributors would not have this option in any case.

12. What lifespan do you consider should assigned to an RPZ and to the premium return?

The obvious approach is to align this with other incentive mechanisms. We suggest that the differential return on investment and the £/MW driver each apply for five years after commissioning. After this point, the investment would be included in the general rate base, and the income considered with the general mass of customers.

For the avoidance of doubt, we expect the impact of the £/MW driver to endure even once a given project has been merged into the core price control. So long as distributors facilitate the connection of generation, they should expect a sustained higher revenue to reward their efforts, much as current revenue drivers operate.

13. What premium do you consider to be appropriate to encourage innovation in DG connections and how could this be justified?

We believe a premium allowing total returns of up to twice the ‘standard’ can easily be justified, as for the NGT capacity incentive scheme noted in the consultation. The need for strong incentives on distributors to develop RPZs seems as acute as that for NGT to make additional entry capacity available.

As noted earlier, the reward must be high enough for distributors to take on the risk of novel solutions, particularly where there is material risk of additional investment being required simply to meet the original aim of the project.

14. Do you have a view on how, in principle, the boundaries of RPZs might be defined? Should they, for example, encompass a physical area, rather than simply an electrical node? Do you see potential, in design or operation, for outsourced specialist services?

We agree that RPZs should be defined primarily by geographic area, to relate them more closely to customers' experience. We suggest that, this could also define a discrete section of network, and that in practice, either could be a defining feature

For example, we have carried out a preliminary review of potential RPZ sites and identified the following generic situations where we have identified practical sites:

- business parks, where generation (and potentially district heating/cooling) could be integrated with network design to offer a lower connection costs for a given level of security than would otherwise be the case;
- social housing schemes, where CHP would be integrated with network design to reduce connection costs; and
- reception networks, where the system would be optimised to accept energy from a number of adjacent generators, and there would be a degree of financial risk upon distributors through investing in advance of firm connection requests (that is, no single generator could afford the full infrastructure, so we would facilitate through advance investment the connection of the group, each bearing their fair share after connection).

For these, the RPZ would be defined primarily by the customer group within a defined geographic area. Each would also be associated with a defined section of network, so that we can integrate generation to reduce overall costs.

We see no reason why we wouldn't be considering the use of specialist service providers in the running of RPZs; it is quite possible that this will prove to be a desirable commercial model for the implementation. Moreover, we might expect to see our decision to do this as being one of those criteria that might be assessed under the innovation considerations.

15. In your view, how should the RPZ initiative be funded?

This seems to us to be an issue best dealt with in the context of the wider price control. For example, the funding route must be consistent with that proposed for 'unregistered' generation connections.

We suggest that the costs of funding RPZs should be carried by those who benefit by from their development. To the degree that RPZs are genuinely test beds for application to the wider network, costs should be shared across customers. To the degree that RPZs provide direct benefits to the users connected therein, that smaller group should fund its costs.

General Questions

16. *Can you suggest alternative regulatory mechanisms that might better deliver the stated objectives of the IFI and RPZs?*

We support the general principles of Ofgem's proposals for IFIs and RPZs as providing valuable tools to meet the objectives outlined. We have suggested earlier in this response some small improvements that we feel would assist this process, such as removing the cap on the number and volume of applications.

However, the detailed points in Panel 2 RPZ Proposals for Discussion, specifically those identified below, raise some concerns:

f) The distributor will ensure that the RPZ is designed and operated to meet all appropriate industry, statutory and technical standards.

g) The distributor would take full responsibility to manage the risks of the scheme and would offer the connecting generator commercial terms reflecting these risks (e.g. liquidated damages).

h) Where the quality of supply of existing customers might be affected by the generation connection the distributor will put in place contingency measures to manage this risk, and measurement equipment to confirm performance.

i) To protect the interests of consumers, normal IIP and Guaranteed Standards would apply in the RPZ.

The thrust of all of these proposals is that risk is placed firmly upon the distributor. It creates no options to offer customers a different profile of risk, to explore whether we can integrate generation and networks in novel combinations. These proposals are unlikely to lead to innovative solutions that require fewer assets than would otherwise be the case. In addition the options for other parties to share or carry some of the regulatory or commercial risks do not appear to have been explored.

In some cases, mainly related to commercial risks, where there are high impact, low probability risks it might be appropriate for the wider customer base to carry that risk rather than the distributor. For example, where a generator makes a significant investment on the basis that an innovative solution will provide an economical connection cost, the question of what happens if the innovative solution fails to deliver arises. The generator would already have made an investment and would be seeking an alternative connection arrangement – one that could be sufficiently uneconomic that the generator could not afford to fund it.

Provided that the distributor has exercised best endeavours to make the solution work, to require the distributor to finance the remedial works would inhibit the innovation process. As proposed, the distributor would be exposed to liquidated damages which could relate to the energy trading market. The magnitude of such risks could far exceed the value of the value of any RPZ incentive.

There is also the issue of quality of supply risk. We agree that it would be reasonable for the distributor to implement remedial works to rectify quality of supply issues that arise following the demonstration of an innovation project, as the maintaining service to our customer base is important. However we believe that it would be inappropriate to implement remedial works in advance of a need being identified, as this could drive unnecessary expenditure. We propose that remedial works are implemented if a need is identified and that in the meantime any CI/CML implications be excluded from the IIP incentive regime. This would reduce a distributor's regulatory risk.

We believe that a similar approach should be taken to manage exposure to regulatory risk arising from some aspects of the ESCR regulations. We propose that in such locations we make the DTI aware of such possibilities and agree to rectify any problems within an agreed timeframe. Within this period, it would be helpful if the DTI could be flexible in its interpretation of the regulations, provided that there was no safety related issues, as this would again reduce the distributors' risk exposure.

This links to our previous point about the need to relax technical and other standards. While we would never put the safety of the public and staff at risk, some solutions could place us in 'technical' breach of the regulations (e.g. minor voltage excursions marginally outside statutory limits). We saw the point of an RPZ as being the ability to suspend these rules, for a limited time in a limited area, to allow us to innovate without undue business risk.

We had hoped for proposals that would allow us to replace (at least to a degree) networks by generation in appropriate locations. For example, one scenario for which we have carried out preliminary analysis is a social housing scheme with district heating. We saw the characteristics of this being:

- reduced upstream assets, lowering the connection cost, through relying on on-site generation to support part of the demand;
- creating a single BSC metering point at the site boundary, so that only spill, top-up and standby (i.e. net rather than gross energy flows) would have to be traded through settlements. This would allow:
  - a combined heat and power package to be provided to residents at an appropriately preferential rate, reflecting the benefit of local CHP;
  - improve the net benefit of on-site generation, through valuing it at the price of energy displaced (at full supplier's tariff) rather than the lower prices often offered; and
  - reducing on-going transportation charges, reflecting the reduction in upstream assets.

All of this would, in our opinion both stimulate distributed generation and create a valuable tool to combat fuel poverty

However, the proposals as drafted preclude such a development. Requiring distributors to manage all the risks, including full exposure to IIP and GSs, mitigates against reducing upstream assets: further, requiring us to implement normal planning standards means we will rarely, for any scheme, install less assets than would otherwise be the case.

Similarly, requiring us to maintain industry standards precludes us from relaxing the BSC to permit energy to be traded at site boundary rather than at individual premises. This materially affects the economics of the scheme.

If we cannot suspend normal rules, whether in planning standards or trading arrangements, there seems nothing different about a power zone that merits special treatment. We should either:

- allow the appropriate set of rules to be suspended on application; or
- focus simply on those aspects not explicitly covered by current standards, such as improving the export capacity made available over time. For this, we require only a £/MWh incentive, not a new category of networks.

We consider this to be an important area of debate going forward. We fully recognise Ofgem's concern, and continuing responsibility, for all customers served by existing networks and indeed we would argue that we have corresponding obligations and responsibilities. Hence, this area needs to be treated with great care to ensure that distributors are not unnecessarily discouraged as a result of ongoing obligations that (by definition) have been developed to suit the 'normal' running arrangements.

We believe that an appropriate risk sharing approach to the pursuit of the low-carbon economy ought to allow some scope for (although admittedly not wholesale) sharing of the inevitable performance risks. We consider it should be feasible to achieve such a balance, without exposing network users to a disproportionate share of the risk.

17. Would it be helpful to consider whether IFI and RPZ arrangements could be introduced on an interim basis, ahead of commencement of the next price control period in 2005?

Yes. We believe that, apart from the issue of ensuring that funding routes do not conflict with the proposals for 'unregistered' generation, these incentives should be seen as largely outside the core price control. Therefore, they can be added at any time to either the current or forthcoming controls. It is important that the necessary frameworks are developed and implemented in as soon as possible to that they can be applied in practice in advance of the 2005 price control period, and hence generate momentum now to secure the 2010 targets.