

## **Innovation and Registered Power Zones**

### **Siemens response to Ofgem Discussion Paper**

#### **Introduction**

Siemens is one of the largest technology companies in the world and invests heavily in Research and Development across all sectors in which it competes. Siemens Power Transmission and Distribution business in the UK is an established supplier to all parts of the Electricity Supply Industry. It provides a full range of products for distribution networks, carries out construction projects and provides other services to DNOs. Siemens in the UK is a world centre of excellence for protection and control systems. Siemens also has interests in large and small scale generation, metering, and operating and managing networks on behalf of their owners.

Siemens carries out Research and Development to meet the needs of a worldwide market, but the size and nature of the UK ESI give it a significant role in setting the agenda and direction for new developments in technology and its use. To date this has been most evident for transmission technology, but could be as significant for Distribution. As Ofgem's discussion paper points out, the Development and Demonstration of new technology requires active input from network operators. Siemens shares the perception that in the past the DNOs have been focussed on other areas and the UK has not fully taken up its opportunity to lead the development of new solutions for distribution networks.

The current regulatory framework has rightly focussed first on the most significant areas for providing customers with cost effective reliable supplies. After 3 review periods, it has become a contributor to the relative lack of innovation in UK Distribution Networks. Siemens believes that now that significant gains have been made in other areas it is appropriate for Ofgem to introduce a corrective mechanism such as the IFI and to further encourage the innovation which will lead to future customer benefits by creating Registered Power Zones.

## Siemens responses to specific questions

### 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?*

The main driver for innovation in a DNO ought to be improved performance, not the acquisition of intellectual property. The incentive mechanism should be chosen to be neutral as regards IP, neither unfairly subsidising a DNO in acquiring it, nor limiting its ability to derive income from IP through its use elsewhere. IP is not presently covered by the regulatory framework. The IFI should avoid bringing it into the regulatory net.

Patent-able Intellectual property is more likely to arise from the 'research' phase of the model R&D process. No incentive to DNOs is proposed for this stage and the innovation is likely to come from suppliers who operate in an internationally competitive environment, so no IP issue arises.

The demonstration phase would be reported upon annually. This would encourage dissemination and adoption of good ideas. Companies are more likely to share the details with other DNOs if they have an interest in IP.

### 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 support the idea and see it as having a real potential benefit for electricity customers. On occasions Siemens has sought the involvement of DNOs in the development of new products, with mixed response. We believe innovation progresses faster towards better solutions where the users have a chance to influence the development at an early stage. The IFI will make it more likely that DNOs become involved in such developments.

Siemens and other suppliers invest money in R&D based on our assessment of the likelihood our customers will buy its results at some time in the future. Justification is based on likely uptake and timing. If the IFI results in a change of behaviour by DNOs towards earlier and more enthusiastic adoption of innovation it will encourage us in our efforts, resulting in earlier benefits for electricity customers.

*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 DNOs could quantify their company's current R&D Intensity and offer their views on an appropriate level for the next DPCR period.*

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The R&D intensity measure appears to relate to Opex rather than Turn Over or Capex. It is a valid comparator for first setting the allowed level, provided that the capital intensive nature of DNOs does not skew the figure too far.

We note from the DTI's analysis that R&D intensity varies widely between industries, so a valid argument could be made for almost any figure below 2%.

Whatever figure is chosen would apply to all DNOs equally and so not favour any one. In future review periods the level could be raised or lowered in order to achieve the desired level of 'innovation.'

*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 F1 and F2 factors?*

The proposed 3 levels reflect the differing nature of likely projects without making the scheme too complex, so we support this approach. We also agree that F1 and F2 should be less than 100%. Given their relative degrees of innovation we would support a figure around 75% for F1 and around 50% for F2

*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 favour a 'visible comparator' approach, rather than a prescriptive one. i.e. the way innovation is managed should form part of each company's annual report. This will tend within a few years to encourage companies towards best practice, whilst allowing 'innovation' in 'innovation management.'

Trade bodies, and organisations like the IEE or DTI could also provide a forum for sharing best practice.

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

The cap should be the same for all DNOs on a use it or lose it basis. All should be encouraged to innovate, as the benefits of innovation will in time be adopted by all others, but only those who innovate first will receive the incentive.

One of the reasons for encouraging innovation is the connection of generation. This would be more 'valuable' in some areas than others, but there are other economic incentives to drive this. The innovation involved in connecting a generator in one part of the country would in due course benefit other sites who followed its example, so there should be no constraints on where innovation first takes place.

## Registered Power Zone (RPZ) Questions

Note: The specific questions on the RPZ proposal relate to its use in the connection of distributed generation. Whilst this is an important driver for the creation of RPZs, Siemens would like to express its support for the concept to be operated as widely as possible.

We believe that innovation can flourish in an area where some of the usual constraints are relaxed. We would be keen to participate in the formation of micro-grids, ideally where a mixture of load types, generation and load management are all part of the mix.

We recommend that the RPZ rules are drawn up so as to allow the potential for groups of customers and suppliers to create such a local micro grid, possibly operating independently of the surrounding DNO. Whilst we appreciate the economic and regulatory issues involved, we believe such zones would allow the early testing of concepts which could have application to wider networks.

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

We share this view. Also we believe it will have additional spin offs. Many modern items of distribution equipment have intelligence and communication facilities built in which are unused by the DNOs. This is because the additional value provided is insufficient on its own to justify replacing their outdated SCADA systems. If distributed intelligence is a feature of the connection of DG the communications links established will allow DNOs to benefit from assets they already have and use them for automation, condition monitoring etc.

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

We support the Gold, Silver Bronze concept. We would suggest that an average of 3 RPZs per year would be adequate, but that it should perhaps be expressed as 15 during a 5 year regulatory period, to avoid a viable fourth scheme being delayed unnecessarily.

*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?*

(Similar to response 4,) 3 bands seems an appropriate level of distinction between differing levels of project.

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

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We believe that the principle is valid. Individual projects will have varying risks, but if a DNO attempts a number of innovative projects it will see an overall benefit.

2 areas will affect the practicality:

The timing of the decision on whether a project has met its objectives needs to be appropriate to avoid a premature decision to give up, or flogging a dead horse in the hope of gaining an IFI.

Assessment needs to be capable of applying common sense where a one off event causes a failure to meet a performance objective, but the principle of the idea is a success.

*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?*

We believe this is an appropriate mechanism.

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

An RPZ it should retain its status as long as innovation continues within the zone. The innovation might include the long term management of assets, or even their eventual replacement.

The premium return should be based on the depreciation period of the asset created. If such a mechanism had been around in 1993 it would be unreasonable for a DNO in 2003 to be receiving a benefit for a personal computer of that vintage, but quite reasonable if the investment had been a quadrature booster which will remain in service for another 30 years.

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

Small scale local generation should only attract a small premium based on the same system as renewable generation, with a factor for the system losses avoided compared with remote fossil generation, (based upon the CO<sub>2</sub> it displaces) There is nothing inherently meritorious about burning a fossil fuel locally rather than remotely. The target for distributed generation is aimed at improving the environment.

*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?*

The aim of an RPZ should be to deliver a given quality electricity supply to a defined group of customers. The RPZ should therefore be based on a customer or load group,

rather than some feature of a network. The customer grouping might be a physical area or a common requirement. The interaction with customers provides more potential for innovation in overall asset management than would a set of plant. It would also allow for long term contracts which outlast individual assets, or even network nodes.

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

Customers inside the RPZ run the risk of failure, or receive the benefits of success. Customers outside the RPZ may benefit in the longer term due to savings when the innovation is applied elsewhere. We therefore believe that all customers of the DNO should pay equally through the normal application of the price control formula.

## **General Questions**

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

None.

*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?*

The IFI should be brought in as soon as these issues are resolved. This will encourage DNOs and suppliers to be thinking now about possible innovation. Also, now that the idea has been floated, there is a risk that some innovation will be delayed through speculation over the chance of a future IFI.

## **General Comment**

Siemens welcomes the concept of IFIs and RPZs. We feel the proposals in the consultation paper are well thought out and will genuinely encourage the innovation which has been lacking in distribution networks over recent years.

We would be willing to provide support to the DGCG by becoming involved in one of the working groups.