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Your letter of Our reference Date	11 January 2012
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**Subject: - Siemens response to Ofgem's Low Carbon Networks' Fund Two Year Review**

Dear Sam,

We welcome the opportunity to offer our comments to Ofgem's review of the Low Carbon Networks Fund.

Siemens has a prominent role in the UK energy market, being leaders in offshore wind generation and interconnectors and involved in the whole electricity supply chain. Additionally Siemens portfolio and relationships within the UK Infrastructure & Cities Sector, around smart cities and smart buildings, gives a comprehensive overview of the UK Smart market. This sector incorporates our Smart Grid division, and demonstrates our understanding of the requirement for holistic approaches towards the low carbon future.

Moreover, during the first two years of the Low Carbon Networks Fund initiative, which was introduced by Ofgem, Siemens has been actively engaged and identified as a valuable partner to various Tier 2 projects, such as Low Carbon London and BRISTOL. This has provided us insight on the industry of Smart Grids, an understanding of the regulatory environment as well as the drivers of the need for Smart Grid investments and the implications to stakeholders.

We have given careful consideration to the issues raised in the review document and this letter sets out our comments and answers to the consultation questions.

**Siemens' responses to specific questions***1. Evaluation criteria*

1. [Do respondents consider that the evaluation criteria have driven certain types of projects at the expense of other learning outcomes? If so, what are these learning outcomes and do they need to be specifically stimulated?](#)

Our response to this question is in the context of our response to question 2, concerning the network impacts of "off network" development. While there is no evidence to date of "off network" proposals being rejected in favour of network proposals, very few proposals have been submitted which focus on the "off network" aspects of the low carbon ecosystem.

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We would ask that further information is published on the way that the tier 2 evaluation criteria are used, and the weighting applied to them, so that this does not unnecessarily deter projects when the criteria are in potential conflict. For instance a project may have low impact on the network (criteria c) but significantly help low carbon development (criteria a) would be good.

## 2. Do the evaluation criteria ensure that the LCN fund is compatible with future developments in smart grids?

It is our opinion that a significant amount of smart grid development will be “off network” (i.e. that part of the energy value chain which is not under the control of distribution and transmission owners and operators). Electricity delivery is seen today as part of a wider ecosystem involving the interaction of energy, infrastructure and transport. Networks are an important part of developing low carbon ecosystems but key to the success is the flexibility of all components within it. A lot of the current interest in smart grids is around demand response and human interaction with energy delivery, and we expect that trend to continue and develop into other areas such as transport and building design and operation.

- Therefore, for the LCN fund to be compatible with developments in smart grids (note the importance of the plurality), it must recognise and facilitate developments in these “off network” areas which will undoubtedly have an impact on the way in which the network operates, and address a more systematic approach at a holistic level. Of concern to us in this regard is the weighting given to individual criteria. For instance we would assert that projects which are largely “off network” and have a relatively low impact on the network, but which can significantly accelerate a low carbon ecosystem, should not be disadvantaged to those with high network impact but lower impact on the deployment of low carbon technologies.

The challenge of balancing funding for network innovation, whilst supporting the wider co-ordination, and integration of DECC policy is recognised – but without increased emphasis (i.e. evaluation) on the “interfaces” and integration with the network, there is a real risk that the LCNF investment does not represent best value for customers. The networks are the enablers to a lower carbon future, not the solution itself.

## 2. Best use of learning

### 3. We welcome your views and experiences on how we can enhance the requirements on learning dissemination for LCN Fund projects to ensure that industry gets the best value from them.

The first annual LCNF conference was an excellent forum for providing an overview of projects. However, it has already been noted by a number of people that by next year there will be so many projects that, in its current form, it can only provide the briefest of overviews. Therefore, we recommend that additionally (or alternatively) a series of workshops and seminars are held which are subject-specific.

These workshops should be focussed on free-flowing information and discussion, rather than on presentations. Reports from projects should be made available prior to the workshops, to enable review and discussion with the aim of boosting learning.

We believe that collaboration and dissemination go hand-in-hand, therefore these workshops would form an excellent opportunity for facilitating collaboration (question 7). A part of the workshops could allow discussion of DNO (non-project-orientated) needs, and provide opportunities for other stakeholders to offer views and solutions.

Further, the issue of learning dissemination is equally, if not more, important within the DNO organisation itself, to ensure knowledge transfer and cross pollination. This is a critical stage of learning to inform investment planning of future regulatory periods – this learning could also have profound impact on the DNO organisational structure, and need for change. The sharing of the DNO learning and organisational change is certainly of interest, therefore it would be proposed that in addition to “project learning” shared at the annual conference, each DNO shares an ‘internal looking’ view of organisational/culture changes and implications – this will help the wider industry to be equipped to support the change process.

### 3. Duplication

#### 4. We welcome respondents' views on the level of duplication across first and second tier LCN Fund projects and what changes, if any, we should make to the LCN Fund governance to address this duplication.

We do not consider that there is significant duplication to an extent which is undesirable. In fact we would go as far as saying that duplication is to be welcomed, to some extent. If projects are rejected due to similarity of technology deployed it has the following effects:

- It favours the technology providers of the trialled solution, which may have the effect of stifling competition and unnecessarily raising costs as the trialled solutions become adopted, since DNOs will favour the providers of the trialled technologies.
- Focus is on testing the DNO deployment rather than any trialled technology, and it does not then allow comparison between similar technologies from different providers.

- If duplication is a material concern to Ofgem, which it is looking to address, we recommend restricting projects – which duplicate previous technology deployments of the same type, from the same technology provider. This would allow enhancement to the learning opportunities since different implementation techniques of similar technologies can then be compared, and learning from incremental developments are more readily generated.

#### 5. We welcome views on whether there is merit in each DNO undertaking its own monitoring or whether this could be avoided if all monitoring data was held in a single place and accessible to all DNOs.

Monitoring is carried out for three purposes. The first is to develop an understanding of profiles and characteristics at a general level, such as is being undertaken in the LV network templates project; the second is to establish base cases against which the effect of any interventions can be compared; and the third is as part of the measurement set for automation and control purposes. Most projects will require a level of monitoring for base cases and almost all projects involving equipment trials will use measurements for automation and control (although not all will describe this as monitoring).

Therefore while we believe that the central storage of monitoring data has value, we do not think it can significantly reduce or eliminate the deployment of monitoring and measurement equipment during trials.

We would welcome the establishment of central storage of monitoring data and recommend that it is accessible to a wider community than just DNOs (e.g. universities, manufacturers, consultants etc.) since the understanding which can be developed from this data can help to drive technology and application advances and accelerate the deployment of low carbon technologies.

### 4. Focussing learning outcomes

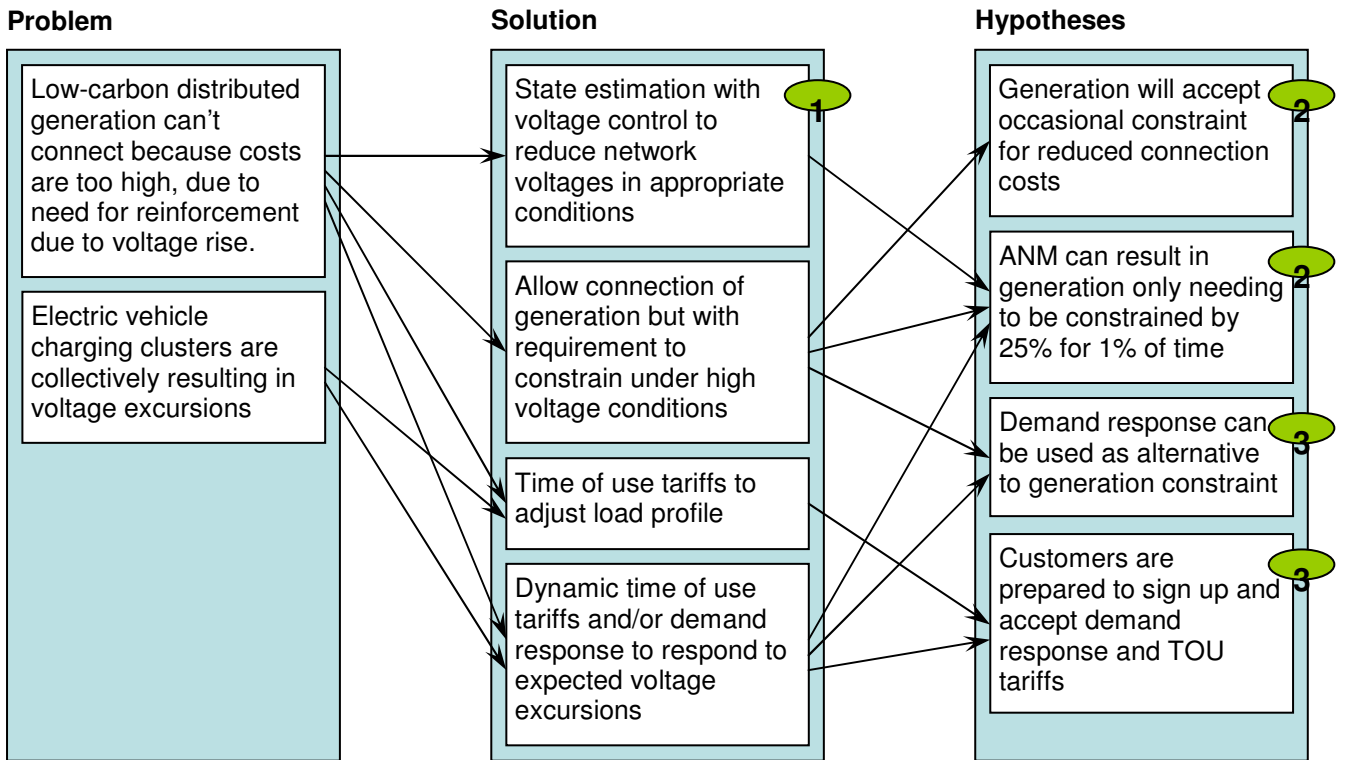
#### 6. Given their wider scope, how can we best gain greater up front clarity in submissions on the learning outcomes of the larger, more complex projects?

While shareable learning is a vital aspect of the LCN Fund, the phrase is 'learning outcome', i.e. a result of carrying out the project. The heavy weight placed by Ofgem on learning outcomes may lead to over emphasis within submissions on the learning outcomes, without coherence on how these are achieved. This results in the stated outcomes being unclear, since there is insufficient detail behind them.

Further, building on the response to question 2, learning outcomes need to address an assessment of projected benefits for "on network" and "off network" stakeholders – larger, complex projects have typically by nature a greater number of interfaces with "off network" stakeholders. In these submissions, involvement of DECC experts could assist in evaluating the "off network" low carbon benefits, which support government policy targets.

Since an LCN Fund project needs to be built around a Method to solve a Problem, it should be possible for each project to draw a map leading from a problem (perhaps comprising a set of issues) through a set of hypotheses or key questions to a solution (comprising a number of solution elements) and finally to a set of trials.

The stated learning outcomes should be able to be drawn directly from one or more of the mappings, as per the example below.



### Learning Outcomes

- 1 Understanding of how to apply enhanced voltage control and state estimation
- 2 Understanding of the impact of ANM techniques on generation, and its acceptability to generators
- 3 Understanding of how to apply demand response and TOU tariffs in a way which customers find acceptable and delivers sufficient response

### 5. Collaboration

### 7. We would be interested to hear your views on your experiences of this website and other means of facilitating collaboration.

While we have registered as a vendor on the ENA website we note limited use of it by DNOs and vendors.

The aim of the site (and the entire LCN Fund) is intended to promote collaboration and shared learning. However, it is our view that the competitive nature of the fund (particularly at tier 2) discourages use of the site by DNOs seeking technology. Likewise, as a technology vendor, Siemens would not necessarily wish for competitors to seek our areas of interest by promoting them on the website.

We refer to our response to question 3 as other means of facilitating collaboration.

## Concluding thoughts

Overall we welcome Ofgem's introduction of the Low Carbon Network Fund to stimulate necessary trialling and deployment of innovative technologies which support the transition to a low carbon energy system. The first two years have demonstrated the success of the fund in providing stimulation, and we hope that this review is successful in further enhancing the programme, which is viewed around the world as an exemplar for driving network change.

With kind regards,

**Dr Vincent Thornley**

Solutions Manager – Smart Grid

– Siemens Infrastructure and Cities