



# SP Transmission & Distribution

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London  
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Your ref

Our ref

Date  
30 November 2006

Contact/Extension  
Scott Mathieson

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Dear Ronke

## **Open Letter Consultation on the Innovation Funding Initiative and Registered Power Zone Schemes for Distribution Network Operators**

I am writing in response to the open letter referred to above on behalf of SP Distribution and SP Manweb. We welcome the opportunity to respond to the issues raised. We strongly recognise the value of both the IFI and RPZ mechanisms and the opportunities they are offering in tackling the challenges we are facing as an industry.

It is evident that engagement in research and development activities in the UK distribution companies prior to the IFI's introduction had reduced to a low level. Yet the UK Energy Review has highlighted the key role networks will have to play in delivering the Government's aspirations and targets for CO<sub>2</sub> reduction. To this extent the innovation mechanisms could not have been more appropriately timed.

Following our active engagement over the last 18 months we offer our observations and suggestions for improvement to both the IFI and RPZ schemes.

### **Progress to date of the IFI**

Firstly, as regards the progress to date of the IFI scheme, whilst it is true that R&D intensity has risen since the inception of the IFI, we do not recognise that such a simple metric as pounds spent following such a short period of time is an accurate measure of company involvement in development activity. It is important to remember that collaboration is key. At 0.5% turnover, the sum of money the IFI allows for development work is small in comparison to the R&D budgets of many manufacturers' or other research programmes such as the Engineering & Physical Science Research Council (EPSRC), Department of Trade and Industry (DTI), European Union (EU), etc.

By working alongside and engaging with these programmes, ScottishPower has levered and secured additional funding, allowing projects of larger magnitude that would not have been possible through use of our IFI allowance alone.

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In doing so, we believe we are providing best value to our customers from our technology programme and giving the necessary industrial direction and steer to UK R&D activities for sustainable, long-term benefits. Owing to complexities such as differing timescales, we have also observed that it is extremely challenging to lever and deliver a true R&D programme in 12months.

We believe leverage is a more accurate measure of engagement in R&D, and importantly forges partnership and collaboration both within the companies and across the sector.

Turning to the numbered points in your paper, our comments on each of these are set out below.

## **1. The cap on IFI internal expenditure**

The success of each project within our IFI programme is dependent on it receiving the right steer, from the right person, at the right time in the development cycle. Without such engagement the project risks being unsuitable for its purpose and will never reach adoption. Whilst risk will always be inherent with R&D it is important to note that too many projects failing through lack of direction will erode confidence in the mechanism and result in a reluctance to engage in future, undermining the value of the whole initiative.

Evidence provided in our 2005/06 distribution IFI Annual Report demonstrates that an annual internal expenditure limit of 15% is too low. The principle factors for consideration impacting on the internal limit are:

- Engagement in both levered programmes, particularly through 3<sup>rd</sup> parties (DTI, EU, EPSRC, ITI Energy, Scottish Enterprise, etc) or small value projects – this can result in significant levels of internal expenditure, with little or even no external expenditure.
- Specific information and knowledge – the design or operation of the network is bespoke to each network operator (indeed each Licencee), the skills are not often available externally.
- Field testing and installation – whilst contractors can be brought in to deploy field trials, this can be inefficient and runs the risk of starving the host company of valuable training and feedback for the early acceptance of trials.
- Project phasing – internal expenditure is highly dependent on the stage of development (i.e. network trials are more time consuming and have higher internal costs than in the applied research phases). This will naturally vary from company-to-company, year-on-year depending on strategy.

Without modification to these limits we may be forced to reduce our involvement in, in particular, smaller value or highly geared projects.

As internal and external costs of IFI related expenditure are fully auditable at the discretion of Ofgem, our preferred position would be for the altogether removal of this limit.

## **2. IFI eligibility criteria**

We recognise that there are two key areas that should be considered in the development of the IFI eligibility criteria:

- Depth of programme – the boundary of where the IFI lies within the R&D cycle
- Breadth of programme – clarity on project areas that are / are not eligible

#### Depth

There is a natural bleed from research through to demonstration with development activities to ensure projects are going to deliver their expected benefits. ScottishPower has adopted the Technology Readiness Levels (as used in the military) to provide a consistent and auditable approach to project progression. This has the added benefit of indicating projects that are about to move out of development, for the creation of appropriate business cases for potential adoption.

It is not evident from the submissions in the 2005/06 Annual Report how far into adoption some DNOs have been taking their IFI projects.

#### Breadth

We are aware of a number of projects that were submitted by other DNOs, which were rejected as not being eligible, for example:

- Involvement in National Working Groups (e.g. Distribution Working Group [DWG])
- IFI projects on asset decommissioning – disposal of waste, treatment of cable oil, etc

If these projects were formally rejected, it would be a useful learning point to identify no-go areas to prevent similar errors being made in the future.

We would like to suggest the rewording of the eligibility statement in the Good Practice Guide, and/or a public statement from Ofgem identifying any projects that are deemed not eligible as they arise following the publication of the IFI Annual Report

### **3. IFI benefit assessment requirements**

We recognise the need to assess the benefits of our IFI projects for two key audiences / drivers:

- Internal: To quantify the expected benefits of a project at its outset
- External: To demonstrate the value of innovation to customers

The methodology employed by ScottishPower Energy Networks to quantify the benefits internally is outlined in our 2005/06 IFI Annual Report. We recognise that the guidance offered in Engineering Recommendation G85, the Innovation “Good Practice Guide”, in looking at financial benefits does tend to focus development activities towards initiatives, products and devices that are closer to market, and therefore less risky. This may in itself be a barrier to innovation, as developments in the earlier phases need to demonstrate substantial financial benefits in order to balance the risk and be taken forward.

We would encourage the development of more comprehensive qualitative assessment methodology, developed by the ENA R&D Working Group and ratified by Ofgem, which could be used for this purpose.

It is evident that the benefits of research and development activities in the regulated networks sector are not as clear-cut as in the manufacturing sector, i.e. successful development does not necessarily link to increased operating profit. This is one of the direct reasons why R&D in this industry has reduced without intervention since 1990.

Correspondingly, in order to demonstrate the value of our IFI portfolio, we recognise that the benefits will be realised across a range of categories:

- Cost savings (Opex or Capex reductions)
- Cost mitigation (avoided costs)
- Risk avoidance
- Strategic – sustainability, development of knowledge, etc

Even after such a short period of time, some of our IFI projects have already started to give rise to a number of these less tangible benefits; some examples are set out in the table below.

Project	Summary	Strategic Benefit
SP Energy Networks / University of Strathclyde UTC (University Technology Centre)	A four year rolling programme of work to investigate and facilitate technology transfer across the following core themes Power System Development, Advanced Network Technologies and Asset Management. The programme employs 1x senior lecturer and will employ 3x EngD post-graduates.	<ul style="list-style-type: none"> <li>• Long-term commitment to UK R&amp;D</li> <li>• Recruitment opportunities</li> <li>• Steer to UK / EU research</li> </ul>
MicroPlanet LV Voltage Regulator	The development of a UK specific power electronic voltage regulator for use on LV overhead line networks	<ul style="list-style-type: none"> <li>• MP USA are looking to establish a UK base, with potential manufacturing centre on the back of this SP / UU trial</li> </ul>
Project DEMON (DEMonstrator for the Management and Optimisation of Networks)	The development of a realistic scaled network demonstration facility for testing system integration and accelerating the route to market for a variety of more 'risky' technologies.	<ul style="list-style-type: none"> <li>• Scenario planning work completed for this project has since fed into DWG Horizon Scanning activities.</li> <li>• An impact assessment to show the potential cost implications of facilitating DG and micro-generation via traditional solutions has been developed based on the SPD network, but scaled to UK level.</li> </ul>

In order to assist in demonstrating the benefits, we would welcome the development of an industry wide scorecard, which could then be used in the annual reporting of IFI activities and may also be used as a link between benefits and eligibility.

To further engage with the customers at large, we would encourage and support industry wide communications, based on successes from IFI portfolios.

#### 4. **RPZ Constraints**

We believe the RPZ mechanism to be a good incentive, albeit difficult to drive within the networks business due to the necessity of engagement with 3<sup>rd</sup> party generator developers. We see a number of issues here that merit further discussion:

- The scheme favours single generation connections that happen to be sited in the right location (connecting to the 'right' part of the network), at the right point in time (in terms of connection order).
- Innovative, cost effective solutions through the use of single generation constraint management systems have been deployed on the two distribution licence areas of

ScottishPower for over 15years. However, in certain areas, we have reached a threshold of 'reasonable' complexity and are now looking to develop alternative systems to facilitate greater generation capacity. We recognise that the timescales and risks associated with these project [e.g. IFI0532 - AURA-NMS] are too great for short-term application.

- Under the current RPZ rules, generators must be connected before March 2010 in order for the RPZ to be awarded. It is widely recognised that the window of opportunity is closing to meet this deadline.

It would be useful if a greater level of information on all registered RPZs were to be available in the public domain, including aspects such as geographical area, overview of technology and application, commercial structure, etc.

## **5. The future of IFI and RPZ in DPCR5**

Research is by its nature, a long-term commitment. In targeting projects across the R&D spectrum ScottishPower EnergyNetworks has a wide range of projects of differing duration, ranging from 3months to 4-5years. Working with academia, in particular, often results in projects commissioned for 3years (the minimum period of a PhD), which can take anywhere from 12-18months just to initiate, a factor dependent on the timescales of 3<sup>rd</sup> parties assessment / approvals processes. Without stability and knowledge of an ongoing commitment to IFI beyond 2010, we will be unable to commit to new applied research projects from as early as 2007.

Unlike many other DNOs, we have taken a staged approach to the development of our IFI programme, building up a development budget of new money year-on-year to provide internal budget credibility, whilst ensuring external leverage is maximised. So despite the high (90%) pass through rates available in the early years of the distribution IFI, our internal processes have constrained our ability to truly exploit to the budget cap. The steady ramp down towards 70% in 2010 is a further factor that is likely to have a detrimental impact on our programme as it progresses.

**In line with both of these points, we would welcome a 5-year rolling commitment, outside the price review windows, to the IFI with an annual flat 80% pass through rate.**

### **Engineering Recommendation G85 – the Good Practice Guide**

Finally, as regards the Good Practice Guide ('GPG'), in owning and operating both transmission and distribution licences, we strongly believe that there should be a single GPG for IFI projects for both T&D networks. In line with consensus from the ENA R&D Working Group, we would like to suggest that the current guide is revised based upon output of this review, and separated into two documents:

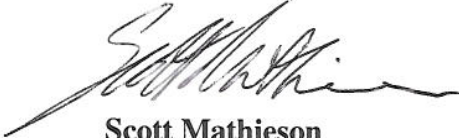
- IFI GPG – generic to electricity distribution and transmission
- RPZ GPG – specific to distribution networks only

ScottishPower EnergyNetworks has been working proactively with National Grid on a document revision and since presented proposals to the ENA R&D Working Group for discussion.

In conclusion, we have successfully embraced the Innovation Funding Incentive for our two Distribution Licences, developing a portfolio of projects in excess of any other UK DNO during the 2005/06 period. You will have received our separate letter on an IFI mechanism for electricity transmission sent to you recently, and we look forward to an opportunity to successfully apply such an incentive in transmission following the current TPCR.

I hope that this is helpful, but please contact me if you would like to discuss.

Yours sincerely

A handwritten signature in black ink, appearing to read 'S Mathieson', written over a horizontal line.

**Scott Mathieson**  
**Regulation Director**