

Dear Dora

## **Response to Draft Network Innovation Allowance Governance Document Version 1**

Thank you for the opportunity to comment upon the draft Network Innovation Allowance Governance Document version 1. The response and comments made by the Energy Innovation Centre are purely from an SMEs perspective in operating within the NIA framework. Our aim is to respond within the spirit of RIIO and OFGEM's aspiration to stimulate innovation across the industry enabling third party's contributions which ultimately provides value to energy customers.

We welcome OFGEMs approach but understand that many of the challenges lie within the detail and operation of the regulation.

As such, our written response gives a high level view of key themes we would like to see the governance document address and then goes onto look in detail at NIA registration, both process and criteria and then the IPR arrangements and sharing of information.

### **1. Broad Observations**

There are a number of observations the EIC has made regarding the governance document, none of which will be new to the policy team at OFGEM:

- Firstly, simplicity is the key to small businesses. In the migration from IFI to NIA we would suggest the best solution would be to only make changes if they are material to the outcome OFGEM is hoping to achieve as any change will ultimately cost money to all parties.
- In terms of IPR, we have outlined a simple approach which we believe will deliver the outcomes of RIIO which is detailed later in this submission. Fundamental to our approach is our belief that each added layer of detail will result in additional costs with a potential to inadvertently create a whole new business machine which interprets the regulation and the legal positions of projects and processes all with the aim of extracting value for customers. There is a danger of the machinery costing more than the value of the monies recouped for customers.

- Whilst the governance document is rightly financially focussed to extract value for energy customers it does not accommodate or recognise the wider benefits that do not necessarily have a clear financial gain. However these might still be the “right things to do” and it would be helpful for the governance document to reflect this to encourage potentially risk adverse Network Operators to innovate in a wider context.

The EIC has for four years been developing an approach which encouraged third parties to bring forward innovations into the sector. We have been mindful of the commercial requirements of the SME and likewise the commercial and regulatory drivers for the DNOs. The issue for DNOs and now GDNs is predominantly about ensuring added value ultimately to energy customer. We have taken this experience and learning and applied it to our detailed response below.

## **2. NIA Registration Process and Alignment with Existing IFI Projects**

The Energy Innovation Centre has reviewed a number of the IFI projects in its portfolio within the context of the draft consultation document in order to:

- Highlight what new opportunities for innovation will be generated by NIA
- Understand how well existing projects fit within the NIA framework
- Identify any ambiguities the NIA criteria throw up
- Highlight any requirements of the NIA criteria that are felt difficult or impractical to fulfil
- Understand if there are any project areas or project types that are currently important to the DNOs/GDNs under IFI that would not fall within the parameters of the NIA criteria

The process for this assessment was to draw out all the NIA consultation document that relate specifically to project criteria and generate a proforma questionnaire, on virtually a line by line basis. This took the form of a list of questions. Six projects were then assessed against these sets of questions to achieve the objectives set out in the bullets above. The

projects picked were deliberately a spread across a mix of TRL levels, and project types, and a mix of application areas including maintenance reduction, civils, and future networks technology. The product of this process i.e. the six projects, 3 DNO and 3 GDN is attached at Appendix A – DNO Projects and Appendix B – GDN Projects.

## 2.1 Results of the analysis

In the main, it was felt by the EIC team that the criteria as currently laid out were relevant and a good match, for many of the EIC projects, within the spirit of the existing IFI.

The consultation document is proposed as a set of criteria, however there may be innovations that cannot be made to fit the initial rule set. There may be innovations that do not explicitly fit NIA, but meet the spirit of NIA, and be enabled to be brought into scope provided there is a transparent reason why it is to be included. We believe this would send a clear message that OFGEM supports experimentation outside the conventional terms of the license and that it is keen to build up a view and cumulative list of innovations that could benefit end customers to inform future dialogue and thinking of the development of the terms of the license.

It was felt that allowing the scope of projects to focus wholly on the trial of commercial innovations was extremely positive as in the past the DNOs have had a hesitancy to engage in novel commercial arrangements:

- partly as a result of tradition, and
- on occasions the constraints of the DNO license have discouraged a commercial relationship with the customer.

By example, demand response and storage are both areas where both these factors come into play. By enabling NIA to be used for wholly novel commercial innovations, a wide new area is opened up for innovation that could enable a new class of original creative ideas without the need for technical novelty.

It is felt that to give the maximum engagement of third parties in particular SMEs, simplicity is key as the language of NIA should be kept as jargon free as possible. For example, use of the terms Research, Development and Demonstration, and Method are potentially

unnecessary and retaining today's familiar language of TRL 2-3 projects, TRL 4-6 projects or TRL 7-8 projects and "Innovation" respectively. The use of the aforementioned proposed terms will mean constant and unnecessary mental translation by all into TRL terms (which in themselves even today need mental translation by less familiar users into their respective TRL definitions). The word "Method" could lose the important fact that what is being sought is "innovations", a word which has much more ambition.

## 2.2 Detailed Response to Clauses

Below is a bullet point list of a number of specific comments and concerns about the criteria, highlighted by the EIC project assessments:

- (i) The criteria refer to "Transmission System" (e.g. 3.6) which we assume to be a generalisation for "Transmission and Distribution"
- (ii) Section 3.6 – specific requirements set 1. As written, this does not on the face of it give scope for projects that are:
  - Health & Safety in nature (including Health & Safety for the general public)
  - to improve the public perception of the DNO/GDN (e.g. traffic disruption, inconvenience or noise), or
  - quality of supply, or
  - novel products or technologies from OTHER UK technology sectors (e.g. the water or rail industry).
- (iii) It is suggested that "unproven in GB" be amended to "unproven in the GDN/DNO or TNO environment".
- (iv) "Direct Impact" needs clarity and definition.
- (v) 3.9 i) and 3.10 i) Dissemination of Learning. As in all cases of IFI projects involving SMEs, there is enormous sensitivity to sharing any of their know how or revealing information about potential future products which might be seized upon by some of the large commercial companies if it were visible. It is absolutely essential in order to attract SMEs into NIA that information about success and specific outcomes of SME related projects is treated sensitively and the sharing of knowledge is on a closely managed basis amongst Licensees (under NDA if

appropriate) section 4 of this letter refers. This may also present a risk to OFGEM in relation to litigation claims re loss of IPR as a consequence of regulation.

(vi) 3.9i) - there are occasions where learning is not applicable to be shared across all Licensees as there are problems or innovations that are only appropriate to particular licensees. It is suggested that this is re-worded to say that “How will the learning generated be used by other licensees that have a similar need or problem?”

(vii) 3.11 – there may be projects where there is NO current “most efficient method” other than to tolerate a known problem or unsatisfactory situation. It is suggested that the guidance notes make it clear that it is understood that there may not be a current method in place.

(viii) 3.12 and 3.13 – savings and roll out. These sections could be interpreted in a wide variety of ways but will potentially resolve by action under 3.17.

Furthermore, the calculation and savings figures currently estimated using IFI PID document is almost always underpinned by a structure of different criteria and assumptions. These vary by License holder. It is suggested that some adjacent commentary in this section be included outlining the assumptions and typical figures.

Alternatively the current PID document (or a revised equivalent) should continue to be used, and the result of that analysis in NPV terms alone be shared to cover the needs of 3.12 to 3.20 as these sections are a partial duplication of the information currently collated in the PID document.

(ix) 3.14 – This is potentially onerous and not terribly practical as it is effectively requests the project owner to “prove that they aren’t doing something”- we suggest that this section is changed to ask for the project owner to state “is there any duplication to any old / other project”. In some instances, large companies maybe developing a product which will be unknown until it comes to market.

(x) 3.19 – similar to the comments above for 3.12 and 3.13, and the comments about duplication with the PID the scope of this has an extremely wide variety of answers and interpretations, and duplication

- Per site
- Per DNO, given that the needs of differing DNOs can be very variable
- Per year

But again this maybe address by actions arising out of 3.17.

(xi) 3.21 – The issue here relates to a common theme running through our assessment, the primary consideration is demonstrating the financial benefits. As mentioned earlier, there are a number of areas where a justification on this metric is hard or impossible to do at a practical level because the benefits are so diffuse, and yet the project would still be regarded by many Licensees as important, such as:

- Health and Safety and safety of the public
- Public noise and nuisance
- Quality of Supply (e.g. harmonics)
- Improved decision making (e.g. example a novel database solution to help engineers)
- Innovations that improve energy efficiency
- Demand response.

### **3. The IPR Challenge**

This response builds upon our previous informal letter to you on 31<sup>st</sup> August 2012. In that letter (attached at Appendix C) we highlighted a number of challenges within the guidance which we believed would have serious implications for the SMEs as the IPR clauses would prohibit SMEs from undertaking NIA projects.

Since we last wrote we have had the opportunity to engage further with the SME community and with independent legal experts who have both concurred with the challenges outlined in our letter of the 31<sup>st</sup> August. Based on our discussions with these

communities and upon further consideration of the NIA governance document we have developed a solution which we believe addresses:

- the challenges initially raised
- provides technologies at a price that provides value for money to Networks and energy customers, and
- allows for knowledge transfer dissemination across the industry.

### 3.1 Proposed Solution

The following details revised clauses which could be adopted by OFGEM for inclusion in the Governance document. Each point includes an explanation of the clause which is in italics.

#### 3.1.1 Key conditions of the treatment of IPR

- (i) Each Participant will disclose their Background IPR for the purpose of undertaking the project and they will grant the other Participants a non-exclusive, royalty free licence of that Background IPR only for the purpose of, effecting the Project and implementing the Project Plan. [All Participants will share their Background IPR for the benefit of the project, at no cost. As such if the Project Partner have made a significant investment in their Background IPR, the Networks are having access to it at no cost]The licensee shall be entitled to sub-licence that Background IPR but only to the extent necessary to effect the Project and implement the Project Plan and subject to the sub- licensee being subject to obligations of confidence no less onerous than those outlined in the IPR conditions. [*This means that the Participants can sub-licence the Background IPR to other parties where required to fulfil the project without incurring a charge and without losing the IPR consideration which have been agreed*]
- (ii) Each Participant retains their rights in all inventions, discoveries and intellectual property contained in its Background IPR. [*This means that there is no way that any party can gain rights to another parties Background IPR*]
- (iii) The Foreground IPR shall vest in and be owned by the Project Partner. If any of the Participants (not being the Project Partner ) creates any Foreground IPR then that

Participant shall promptly disclose that Foreground IPR to the Project Partner and assign that Foreground IPR to the Project Partner. The assigning Participant will, if required to do so by the Project Partner, do all things and execute all documents necessary to vest all such Foreground IPR absolutely in the Project Partner as absolute legal and beneficial owner (without payment to the assigning Participant) and to secure, preserve and enforce all appropriate forms of protection therefore in any part of the world. *[This means that the all Foreground IPR developed as part of a project is wholly owned by the Project Partner and they are responsible for protecting the IPR, this means there will be no issues with sharing the IPR and any complex ownership arrangements].*

- (viii) The Project Partner will be responsible for the preparation, prosecution and maintenance of all relevant patent applications and all other IPR registrations which may benefit and protect the Foreground IPR and any other legal proceedings concerning such patents, patent applications and IPR registrations. *[This means that the Project Partner is responsible for the cost of protecting all IPR relating to the Project]*
- (ix) If the Project Partner is unable or unwilling to protect the Foreground IPR, the other Participants will consider how best to deal with such Foreground IPR. In this event the Participants may require the Project Partner to effect an assignment of the Foreground IPR to a nominated party willing to protect and maintain the Foreground IPR and the Project Partner would be bound to do all things and execute all documents necessary to vest all such Foreground IPR absolutely in the nominated party as absolute legal and beneficial owner. *[This protects the Networks as they have the ability to appoint another company to protect the Foreground IPR if the Project Partner can't due to financial cost or due to being unwilling]*
- (x) In recognition of the Project Partner assigning its Foreground IPR to a nominated party, a royalty and/or other appropriate form of remuneration which is fair and reasonable taking into consideration the respective financial and technical



contributions of the Project Partner concerned to the development of the Foreground IPR, the expenses incurred in securing intellectual property protection and the costs of its commercial exploitation and any use of Background IPR. [*This protects the Project Partner in the event that someone else is nominated to protect the IPR, the nominated party still has to pay the Project Partner a return which represents the value of the IPR prior to protection*]

- (xi) The nominated company would be required to abide with all the IPR conditions as if it were the Project Partner. [*This protects all Participants*].
- (xii) The Project Partner would grant to the Participants (and their respective Affiliates) a perpetual, non-exclusive, royalty-free licence to use the Foreground IPR for their own internal research and development purposes, for the purpose of undertaking the Project but not for the purposes of commercial exploitation. [*This allows Participants to use the background and foreground IPR for free for internal R&D purposes and for learning. The Participant is not allowed to commercially exploit the IPR which protects the Project Partner and allows them to build a commercial business*].
- (xiii) If the Project Partner decides not to commercially exploit the Foreground IPR then, if one or more of the Participants wishes to commercially exploit the Foreground IPR, the Project Partner will grant to the Participants a non-exclusive licence to use such Foreground IPR for that purpose, subject to the agreement of appropriate terms, including a royalty and/or other appropriate form of remuneration which is fair and reasonable taking into consideration the respective financial and technical contributions of the Project Partner concerned to the development of the Foreground IPR, the expenses incurred in securing intellectual property protection thereof and the costs of its commercial exploitation and any use of Background IPR. [*This protects the Networks in the event that the Project Partner doesn't commercially exploit the Foreground IPR as it allows the Participants to appoint another company to exploit the IPR and thus the Networks will always be able to purchase the product that they've developed with the Project Partner*]

### **3.1.2 Options in relation to Funding Licensees achieving a return on investment**

If the Project Partner develops a commercial product using the Foreground IPR a mechanism which provides the Funding Licensees with a return on their investment will need to be agreed. There are a number of different options for ensuring the Funding Licensees receive a financial return, these are noted below:

*(i) Profit share and discount*

Funding Licensees receive a % of the net profits made in relation to the product in addition to a discount on the price of the product, where the price of the product will be in excess of 25% above the direct cost e.g. 40% above direct cost and 5% of net profits.

*(ii) Ratcheted discount*

Funding Licensees receive a discount on the price of the product which is ratcheted down over the four years e.g. 50% over the direct cost in the first year, 35% over the direct cost in the second year, 25% over the direct cost in third year and 20% over the direct cost in fourth year.

*(iii) Reduction in discount and extension of term of discount*

Funding Licensees receive a lower discount on the price of product, but for a longer term e.g. 40% over direct cost for six years.

*(v) Funding Licensees to receive a discount from lowest retail price*

The Company to disclose the prices paid by others for the product each month, Funding Licensees to receive a discount based on the lowest retail price, with a fall back provision of 35% above direct cost if no one other than the Funding Licensees are buying the product.

*(vi) Discount to be capped at Funding Licensees investment*

The Funding Licensees to receive a discount based on the lowest retail price of the product. The entitlement to receive such a discount to cease once the cumulative value of the discount given is equal to the investment made by the Funding Licensees e.g. if the Funding Licensees made an investment of £20,000 and they received a discount of £50 per product

that they purchased once they had purchased 400 products they would no longer be entitled to a discount.

*(vii) Discount to be linked to size of enterprise*

Funding Licensees to get larger discounts from enterprises that are classed as medium/large enterprises in comparison to those who are smaller enterprises. This may however encourage Funding Licensees to steer away from investing in smaller enterprises.

*(viii) Royalty payment based on number of sales*

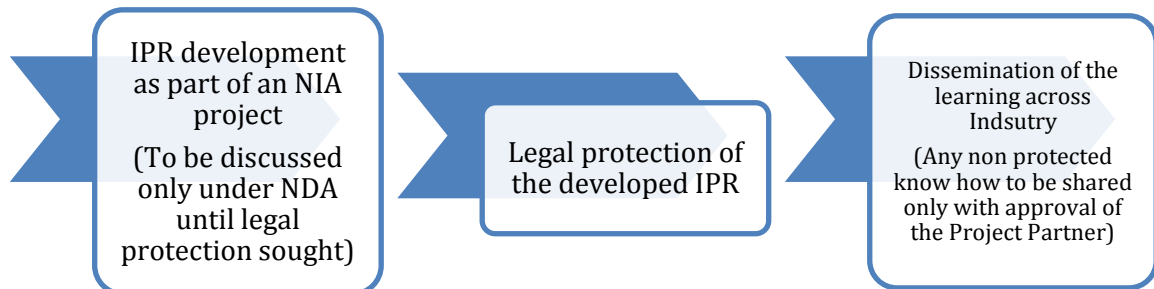
Funding Licensees to receive a Royalty Income based on the number of unit sales of the Commercial Product that is sold using the Foreground IPR. This could be a fixed Royalty amount per unit sale or a % of the Standard Retail Price.

#### Licensing

Dependent upon the preferred option chosen in relation to Funding Licensees achieving a return on investment, the Funding Licensees could receive a Royalty payment from the Project Partner if the Project Partner licences the Foreground IPR. We would suggest that a standard form of licence is produced between the Funding Licensees and the Project Partner for such a Royalty arrangement and that a suitable independent expert party or body is nominated to settle any disputes as to the commercial terms of such a licence.

#### **4. Knowledge Dissemination Across Industry**

In order to enable dissemination of learning across the industry whilst providing Companies with a commercial incentive to engage in NIA projects, we believe the best solution is as follows:



The key concern is the sharing of learning before the IPR had been protected, thus leading to the IPR not being able to be legally protected therefore deeming it valueless. This would not add value to the Project Partner nor the Funding Licensees.

Knowledge transfer through conferences and similar events should be encouraged, although any confidential information which may impact on the Company's ability to legally protect the Foreground IPR should be held back until legal protection is sought. There may be instances where this confidential information could be disclosed to small groups under an NDA if there was an urgent need for the information.

## 5. Summary

We believe that the above solutions address the key challenges which were outlined in our letter dated 31<sup>st</sup> August 2012. We believe it enables SMEs to engage with industry specifically via NIA projects, it allows Funding Licensees to achieve a financial return for their investment and it allows for dissemination of learning across the industry. We also believe that by adopting the solutions noted above, there will be no requirement for a carve out clause which results in the process becoming simpler thus eliminating any resource time required to administer such a process by OFGEM or any other third party.

## 6. Conclusion

From the EIC's perspective, it appears that it is in the best interest of the energy customers and OFGEM to create an environment that allows SMEs to thrive in this sector creating solutions and potentially a whole new supply chain of innovative business delivering added value through their innovations and their impacts on performance and costs of the networks. Whilst the focus of our response has been in relation to NIA there are a number of suggestions detailed above that will be applicable for NIC.

Should you require any further information or clarification, please do not hesitate to contact me.

Yours sincerely

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Enc: Appendix A – 3 x DNO Projects  
Appendix B – 3 x GDN Projects  
Appendix C – Letter to OFGEM dated 31 August 2012

Ofgem  
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SW19 3GE

31 August 2012

Dear Dora

### **Comments on the draft NIA Governance Document (17.08.12)**

Further to the email from Ofgem dated 17 August in which you circulated the draft NIA Governance Document, this letter incorporates our initial response to the detailed guidance within the document.

We understand that a further formal consultation will take place at the end of September where there will be a further opportunity to feedback our comments. We intend to collate wider views from the SME community between now and the formal consultation which will provide Ofgem with information allowing the governance document to be developed in such a way that will continue to encourage and enable SMEs to contribute and engage with the NIA and NIC process.

Our response is structured firstly, to comment and respond to specific clauses, then some broader thoughts are shared from an SME perspective. However I would like to begin by welcoming Ofgem's approach in including the Energy Innovation Centre in the IWG and consultation process allowing us to share with you and industry the perspective of small businesses who are developing products and services that can be applied to the network. We sincerely hope that the major strides that Ofgem has achieved with IFI and LCNF can be developed and capitalised upon through the NIA and NIC process.

Below we have identified some challenges that the draft document presents. At this stage we haven't included potential solutions but will look to do so over the next six weeks.

#### **7.8 The sharing of IPR between Participants**

When a patent application is made to protect the IPR it can only be registered in a sole person's name or a sole Company name. There will be more than one participant if the IPR is being shared and therefore there will need to be a Company set up with each Participant being an equal shareholder. There are potentially many legal issues to consider if the Licensees are required to establish Companies with other Participants.

#### **7.9 Transfer of Assets**

This could have an impact on the ability of the Project Partner to build a commercial business and then exit the business. It would deter from a future sale of the business if these terms had to be assigned. It is also unlikely that an equity provider would invest in a business with these terms. See later section entitled 'Ability to raise equity investment'.

## 7.10 Transfer of Rights by Funding Licensee

This clause implies that a Funding Licensee could transfer its right in the Foreground IPR to another company if it charges for the IPR realising its commercial value. Here a Funding Licensee will be receiving a financial commercial return from the transfer of the Foreground IPR whilst a Project Partner will be required to grant a free non-exclusive licence to another party for use of their Relevant Background IPR.

Where the Relevant Background IPR is required to use the foreground IPR, the Project Partner would be required to licence their Relevant Background IPR to the party who has been assigned the rights to the foreground IPR. A Project Partner may have spent many years in the development and investment of the Background IPR is unlikely to be comfortable with not also receiving a commercial financial return for their Relevant Background IPR.

## 7.12 Licensing Background IPR

As noted above the Background IPR is the value created by the Project Partner and is their ability to build a commercial business. A commercial return is made by a company on its Background IPR, either by the licence of the Background IPR to a party who wants to use any Foreground IPR or the development of the Background IPR into a commercial product. The Background IPR is also the competitive advantage that a Company has over its competitors. Granting all Participants the use of the Relevant Background IPR in order to use the Relevant Foreground IPR will limit the Companies ability to create commercial revenue. Again this will affect a Companies ability to raise external investment as discussed later. Further clarity in relation to "Participants" would be helpful.

## 7.13 Licensing Foreground IPR

The clause references commercial products below TRL3. A product is not considered commercially viable until it reaches TRL8. Technologies prior to TRL 3 are predominantly theoretical concepts which become prototypes at TRL4. As it stands this will erode what is currently Background IPR to a company and therefore reduce the value in the company itself which will reduce its financial viability.

The EIC experience has been that most DNO's are reluctant to fund projects at TRL 3 and have a preference for projects from TRL 4 upwards. *As such this "carve out" in practice will be rarely used and as such will discourage small R&D providers and new entrants from entering into NIA projects.*

## 7.14 How Foreground IPR will be used

This will need to be clarified in order to ensure consistency of application.

## 7.16 Automatic rights to Foreground IPR

As it stands this clause would appear to be extremely broad and it would be unlikely that SMEs would have the financial ability to sign up to this approach as it suggests that all Licensees can commercially exploit the Foreground IPR. However it could be curtailed by relating it to other Licensees who can use the learning and Foreground IPR for their own internal R&D, training.



### 7.17 Automatic right to Background IPR

It would appear, as in 7.16 for this to be effective an explicit statement confirming that the Background IPR cannot be commercially exploited would be required.

### 7.23 Protecting Participants Rights

Given the approach to sharing IPR, in practice it will be potentially unworkable to legally protect Participant rights as owners and licensors if third parties can access the relevant Foreground IPR.

#### Ability to raise equity investment

We believe that the current IPR terms have a significant effect on the Companies ability to raise investment. The EIC work with a regional equity firm who only invest in Energy Technologies. The fund were asked in confidence, whether they would invest in a Company with the following IPR terms:

- Where a Company transfers any of its right, title or interest in or to any Foreground IPR the assignee/transferee abides by the default IPR conditions, which include sharing the Foreground IPR with all Licensees and providing a Non-exclusive licence to the Background IPR to the other Participants.

The response was that a company with those terms would be un-investable and cited three key reasons;

1. By granting a licence to the Relevant Background and Relevant Foreground IPR to all Licensees the market is instantly curtailed and there is therefore an impact on the company's ability to create commercial revenues as all IPR has been shared for free.
2. The main value of a company is held in its Background IPR. Any commercial investor will be looking at the IPR held in the company as its value. No commercial investor would allow anybody other than the Funding Licensees access to the Background IPR. It would therefore be very difficult for an investor to sell their share in a company if there was no commercial realisation.
3. An investor is always looking at the exit strategy of a company. If the Purchaser would have to take on the Default IPR terms this would prohibit a sale of the business.

#### Impact on current IFI projects being run through the Energy Innovation Centre

There are currently 9 projects operating within the EIC with a further 3 about to begin. Of these 12 projects 8 would not have been possible under the draft NIA governance conditions.



All of these companies are developing new commercial products and most are either pre revenue or start-up companies. They are the most vulnerable as they need to secure external investment in order to commercialise the technology and grow the business. The IPR clauses as they stand would make the companies un-investable and as such these commercial products may never reach market.

Additionally, there are two broader concerns. There is a danger that such an approach to IPR may inadvertently introduce measures which could stifle investment by commercial organisations and therefore limit the opportunity to leverage the investment made by customers, with the consequence that customer money may have to fund 100% of network innovation.

There is also potential that the terms would kill collaborative work, because if one DNO chooses to wait for the outcome and gain competitive advantage without risk, then others would soon display the same behaviour. They also are likely to kill single DNO funded innovation, as the Innovative DNO would effectively have to fund up-front the license costs of all DNOs in the costs of the project. There would be limited "first mover advantage" and much higher costs and risks for the Innovative DNO.

In summary the proposed default IPR position has serious implications for the SMEs that we work with and also for our business as we believe that the IPR clauses will prohibit SMEs and other commercial organisations from undertaking NIA projects.

As stated earlier the EIC is committed to supporting Ofgem in achieving its objectives. We will endeavour in the coming weeks to seek further views for the market and obtain legal advice to identify further options which will assist this process. The offer remains for Ofgem to talk with the customers of the EIC, review our current approach to achieving a return on investment for the DNOs and energy customers which is working in practice.

Yours sincerely

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# NIA Sample projects - current match of EIC IFI projects with NIA criteria

## Project example - PURL2



### Specific requirements set 1

Does the innovation involve the Research, Development or Demonstration of AT LEAST ONE of the following :

NIA section ref		Yes/ No	How?
3.6	A specific piece of new (i.e. unproven in GB) equipment (including control and communications systems and software) that will have a Direct Impact on the GB Transmission System.	Yes	The PURL2 instrument is a technical improvement on existing equipment for detecting wood rot in wooden poles used in the distribution network.
3.6	A novel arrangement or application of existing electricity transmission equipment (including control and communications systems software) that will have a Direct Impact on the GB Transmission System	No	
3.6	A novel operational practice directly related to the operation of the Electricity that will have a Direct Impact on the GB Transmission System	No	
3.6	A novel commercial arrangement that will have a Direct Impact on the GB Transmission System	No	

### Specific requirements set 2

One of the purposes of the NIA is to allow learning to be shared amongst Licensees  
 The NIA Project must develop new learning that can be applied by all Relevant Network Licensees. However, we recognise that the Licensee may wish to address challenges specific to their network

The project must meet ALL of the requirements below

### 3 (a) Has the potential to develop learning that can be applied across all relevant Licensees

3.8	Could the learning that can be applied by all Relevant Network Licensees?	Yes/ No	<input checked="" type="checkbox"/> Yes
3.9 i)	How will the learning generated be used by all Licensees <b>OR</b>		Through project reviews and updates at the EIC quarterly DNO meetings with supporting project reports
3.9 ii)	What specific challenge in the Licensees innovation strategy is it relevant to		
3.10	Does the Licensee wish to deviate from the default requirement for IPR in section 7? IF YES it must:	Yes/ No	<input type="checkbox"/> No
3.10 i)	Demonstrate how the learning from the Project can be meaningfully disseminated to network operators and other interested parties	Does it? / How?	<input checked="" type="checkbox"/> Yes Through both the availability of reports from the project, and the eventual availability of the PURL2 instrument for purchase
3.10 ii)	Take into account any potential constraints or costs caused, or resulting from, the imposed IPR arrangements		<input checked="" type="checkbox"/> Yes The PURL2 design that would result from the work would have results and information on its functionality shared with other Licensees but the specific details of the hardware and software design would remain confidential to EA Technology

3.10 iii) justify why the proposed IPR arrangements provide value for money for consumers

Yes	The Licensees concerned will recover their investment from purchase of the end product as well as receive operational cost reductions and network improvement benefits
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**3 (b) Has the potential to deliver net financial benefits to electricity Customers**

3.11 How does the the method being used have the potential to deliver the Solution at a lower cost than the most efficient Method currently in use on the GB Transmission Systems

Increased accuracy of detection of wood rot in wooden poles will lead to fewer replacement of sound poles.
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3.12 i) What is the saving if the problem is solved (i.e. from the PEA(PID))?

Depending on the pole's location and how easily it can be accessed we can assume an approximate cost of £1,000 per pole replacement would be avoided.
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3.13 iii) Estimate how replicable the Method is across GB in terms of the number of sites, or the percentage of the GB Transmission System, where it could be rolled-out; and

There are currently ~5 million wooden poles in the UK. Of these, ~10% (500,000) are replaced each year. Of the replacements, ~20-30% (100,00 to 150,000) are replaced unnecessarily due to misdiagnosis of the pole's condition.
--

3.13 iv) Provide an outline of the costs of rollout the Method

It is assumed that a DNO with a single licence area will buy 25 PURL2s over a five year period on a linear basis (i.e. 5 instruments per year).
---

3.14 Using the PEA (PID) demonstrate how no unnecessary duplication will occur as a result of the project

No duplication that we know of.
---------------------------------

**3.15 For info**

Unnecessary duplication is likely to occur if the new NIA Project is not expected to lead to recognised new learning. Projects that address the same Problem, but use a different Method, will not be considered as unnecessary duplicates. For the avoidance of doubt, Projects that are at different TRLs will not be considered as unnecessary duplicates

3.19 In the case of a Development or Demonstration the Licensee must be able to use the guide to explain the financial benefit of the Project by the following:

Estimate the costs of delivering the Solution (at the scale being tested within the Project) through the most efficient Method currently in use on the Electricity Transmission System - the Base Case Cost

£100,000,000 spent replacing misdiagnosed poles but cost/benefit questions of this sort could be answered in many different ways depending on the project
---

Estimate the costs of replicating the Method, at the scale being tested in the Project, once it has been proven successful - the Method Cost

If miss-diagnosis cut from 20% to 5% then only £25,000,000 spent replacing misdiagnosed poles
---

**3.20 Note** The difference between the Base Case Cost and the Method Cost for a Development or a Demonstration is the financial benefit of the Project. Where a Licensee is looking to test more than one Method It should outline the financial benefit of each separate Method and the above steps repeated

**3.21 Note** Until the guide is approved the Licensee will only be able to start new Projects with a clear monetary benefit

**Registration process requirements**

3.23 i) Is the Licensee requesting an exemption from the default conditions for the IPR set out in section 7?

Yes/ No
<input type="checkbox"/>

3.23 ii) Does the Licensee intend to make payments to itself or to Related Undertakings as set out in section 4?

If the answer to either of the above questions is yes, approval will need to be sought from OFGEM

Yes/  
No

3.30 Will the project incur Allowable NIA Project Expenditure  
Projects that do not incur NIA expenditure a project can still be eligible to receive Allowable NIA Expenditure if the outturn costs and benefits are different from expectation

### 3.1 Registration information

Project Title

PURL2

Funding Licensee (s)

SP and SSE

Problem

All of the 5 million poles currently installed on the UK electricity network are subject to continual degradation due to rot. Considerable resources are spent identifying and replacing poles which do not have an acceptable factor of safety. Misdiagnosis can lead to unnecessary expenditure in replacement or lead to safety and network reliability issues. Current assessment techniques either require extensive operator training and experience (e.g. hammer test) and can often misclassify sound poles, or physically damage the pole in the process of taking the measurement (e.g. invasive drilling). In addition modern preservatives are not as effective as those that have been used in the past and so the problem is likely to become more extensive. With the renewed interest in asset condition and health indices a more accurate and nonsubjective measurement of the internal condition of a wood pole is required.

Method (s) including whether the method is commercial or technical

The proposed PURL2 instrument will be based on the current PURL instrument but with additional features to simplify use, reduce operator training requirements, provide enhanced accuracy and offer a more intuitive user interface. Specifically the new instrument will make use of four measured parameters, ultrasonic attenuation, ultrasonic time of flight, surface hardness and moisture content to increase measurement accuracy and reduce uncertainty. These will be combined into a single measurement of pole condition providing compatibility with condition based maintenance methodologies. All these measurements will be implemented in such a way that physical damage to the pole is minimised, having no more effect on the surface of the pole than standard climbing spikes. All measurements will also be time and location stamped which, when combined with wired and wireless connectivity, will allow integration into field and office based asset management systems.

Scope and Objectives - including the benefits which should directly accrue to the GB Transmission System

The scope of the project is to develop a new instrument that increases the accuracy of rot diagnoses in wooden poles compared to existing techniques.

Success Criteria - how will the project measure its success

Success will be measured from the results of a field trial of pre-production units.

Project Partners and external funding - details of actual or project partners and other external funding

There is no external funding.

Potential for new learning detailing what parties hope to learn and how the learning will be disseminated

The learning will be disseminated by reports from the project describing the capabilities of the new instrument and how it performed in test conditions. This will provide invaluable insight into the value of this instrument.

Scale of Project - the Licensee should justify the project in particular explaining why there would be less potential for learning if the Project were of a smaller scale

The project only seeks to design/build/test pre-production units, it would not be possible to reduce the scale of the project any further.

Geographical area, giving details of where the trial (s) will take place and if the Project is collaboration, the Funding Licensee area (s) in which the Trial (s) takes place should be identified

Field trials will be conducted by the sponsoring licensees.

# NIA Sample projects - current match of EIC IFI projects with NIA criteria

## Project example - FM SUDAFIX



### Specific requirements set 1

Does the innovation involve the Research, Development or Demonstration of AT LEAST ONE of the following :

NIA section ref		Yes/ No	How?
3.6	A specific piece of new (i.e. unproven in GB) equipment (including control and communications systems and software) that will have a Direct Impact on the GB Transmission System.	No	
3.6	A novel arrangement or application of existing electricity transmission equipment (including control and communications systems software) that will have a Direct Impact on the GB Transmission System	No	
3.6	A novel operational practice directly related to the operation of the Electricity that will have a Direct Impact on the GB Transmission System	Yes	Demonstrating the potential use of the FM Sudafix product "Conducrete" to aid earthing and discourage copper theft.
3.6	A novel commercial arrangement that will have a Direct Impact on the GB Transmission System	No	

### Specific requirements set 2

One of the purposes of the NIA is to allow learning to be shared amongst Licensees  
 The NIA Project must develop new learning that can be applied by all Relevant Network Licensees. However, we recognise that the Licensee may wish to address challenges specific to their network

The project must meet ALL of the requirements below

### 3 (a) Has the potential to develop learning that can be applied across all relevant Licensees

	Yes/ No	How?
3.8 Could the learning that can be applied by all Relevant Network Licensees?	Yes	
3.9 i) How will the learning generated be used by all Licensees <b>OR</b>		The report produced by a third party will provide evidence of the technical specification of conducrete. Only two licensees paid for the project and so have direct access to reports. However FM Sudafix are free to distribute the reports
3.9 ii) What specific challenge in the Licensees innovation strategy is it relevant to		
3.10 Does the Licensee wish to deviate from the default requirement for IPR in section 7? IF YES it must:	No	
3.10 i) Demonstrate how the learning from the Project can be meaningfully disseminated to network operators and other interested parties	Yes	Full report by 3rd party
3.10 ii) take into account any potential constraints or costs caused, or resulting from, the imposed IPR arrangements		Not applicable

3.10 iii) justify why the proposed IPR arrangements provide value for money for consumers 

Not applicable
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**3 (b) Has the potential to deliver net financial benefits to electricity Customers**

3.11 How does the the method being used have the potential to deliver the Solution at a lower cost than the most efficient Method currently in use on the GB Transmission Systems 

If Conducrete has lower resistance than other similar products, then less civil work will be required for earthing. Additionally if Conducrete passes all criteria, it could be used to deter copper theft.
---

3.12 i) What is the saving if the problem is solved (i.e. from the PEA(PID))? 

70% savings compared to using other similar products
--

3.13 iii) Estimate how replicable the Method is across GB in terms of the number of sites, or the percentage of the GB Transmission System, where it could be rolled-out; and 

Conducrete could be used in any application where earthing is required and/or some protection from copper theft is required.
--

3.13 iv) Provide an outline of the costs of rollout the Method 

A 2.5m trench using conducrete would cost about £200
--

3.14 Using the PEA (PID) demonstrate how no unnecessary duplication will occur as a result of the project 

There is duplication in that there are other products on the market but this product has better efficiency
--

3.15 **For info**  
Unnecessary duplication is likely to occur if the new NIA Project is not expected to lead to recognised new learning. Projects that address the same Problem, but use a different Method, will not be considered as unnecessary duplicates. For the avoidance of doubt, Projects that are at different TRLs will not be considered as unnecessary duplicates

3.19 In the case of a Development or Demonstration the Licensee must be able to use the guide to explain the financial benefit of the Project by the following:  
  
Estimate the costs of delivering the Solution (at the scale being tested within the Project) through the most efficient Method currently in use on the Electricity Transmission System - the Base Case Cost  
Estimate the costs of replicating the Method, at the scale being tested in the Project, once it has been proven successful - the Method Cost 

For a 10m earthing trench - £675
For a 2.5m earthing trench - £200

**3.20 Note** The difference between the Base Case Cost and the Method Cost for a Development or a Demonstration is the financial benefit of the Project. Where a Licensee is looking to test more than one Method It should outline the financial benefit of each separate Method and the above steps repeated

**3.21 Note** Until the guide is approved the Licensee will only be able to start new Projects with a clear monetary benefit

**Registration process requirements**

3.23 i) Is the Licensee requesting an exemption from the default conditions for the IPR set out in section 7? 

Yes/ No ?
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3.23 ii) Does the Licensee intend to make payments to itself or to Related Undertakings as set out in section 4? 

No
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If the answer to either of the above questions is yes, approval will need to be sought from OFGEM

Yes/  
No

3.30 Will the project incur Allowable NIA Project Expenditure  
Projects that do not incur NIA expenditure a project can still be eligible to receive Allowable NIA Expenditure if the outturn costs and benefits are different from expectation

Yes

### 3.1 Registration information

Project Title

FM Sudafix - Conductive Concrete

Funding Licensee (s)

SP and SSE

Problem

Traditional earthing methods are susceptible to theft and corrosion and due to certain ground conditions such as shale or rocky ground, etc. effective power system earthing can be difficult. To overcome this challenge FM Sudafix designs and supplies industry with earthing systems, the primary product is a conductive concrete compound called "Conducrete" which has a resistivity of approximately four times lower than any other product of this type. Conducrete has been successfully applied in a number of industry sectors such as telecoms, but not yet by Distribution Network Operators (DNOs).

Method (s) including whether the method is commercial or technical

Third party testing of Conducrete to establish the electrical resistance, thermal stress and mechanical impact resilience.

Scope and Objectives - including the benefits which should directly accrue to the GB Transmission System

The scope of the project is to assess the earthing performance of Conducrete in power distribution networks.

Success Criteria - how will the project measure its success

Success will be measured by a combination of tests. Does Conducrete have less resistance compared to other similar products. Could Conducrete deter copper theft. Will conducrete be suitable for use as an earthing system under fault conditions.

Project Partners and external funding - details of actual or project partners and other external funding

There is no external funding.

Potential for new learning detailing what parties hope to learn and how the learning will be disseminated

It is hoped that Conducrete will be proved suitable for use for earthing in a power distribution network.

Scale of Project - the Licensee should justify the project in particular explaining why there would be less potential for learning if the Project were of a smaller scale

The project was scaled to be significant enough to duplicate a power distribution circumstance.

Geographical area, giving details of where the trial (s) will take place and if the Project is collaboration, the Funding Licensee area (s) in which the Trial (s) takes place should be identified

The trial is taking place at EA Technology, Capenhurst, Cheshire.

# NIA Sample projects - current match of EIC IFI projects with NIA criteria

## Project example - GENDRIVE



### Specific requirements set 1

Does the innovation involve the Research, Development or Demonstration of AT LEAST ONE of the following :

NIA section ref		Yes/ No	How?
3.6	A specific piece of new (i.e. unproven in GB) equipment (including control and communications systems and software) that will have a Direct Impact on the GB Transmission System.	Yes	A new type of power performing network voltage support that has not been considered before
3.6	A novel arrangement or application of existing electricity transmission equipment (including control and communications systems software) that will have a Direct Impact on the GB Transmission System		
3.6	A novel operational practice directly related to the operation of the Electricity that will have a Direct Impact on the GB Transmission System		
3.6	A novel commercial arrangement that will have a Direct Impact on the GB Transmission System		

### Specific requirements set 2

One of the purposes of the NIA is to allow learning to be shared amongst Licensees  
 The NIA Project must develop new learning that can be applied by all Relevant Network Licensees. However, we recognise that the Licensee may wish to address challenges specific to their network

The project must meet ALL of the requirements below

### 3 (a) Has the potential to develop learning that can be applied across all relevant Licensees

3.8	Could the learning that can be applied by all Relevant Network Licensees?	Yes/ No Yes	
3.9 i)	How will the learning generated be used by all Licensees <b>OR</b>		Through project reviews and updates at the EIC quarterly DNO meetings with supporting project reports
3.9 ii)	What specific challenge in the Licensees innovation strategy is it relevant to		
3.10	Does the Licensee wish to deviate from the default requirement for IPR in section 7? IF YES it must:	Yes/ No No	
3.10 i)	Demonstrate how the learning from the Project can be meaningfully disseminated to network operators and other interested parties	Does it? / How? Yes	Through both the availability of reports from the project, and the eventual availability of the Gendrive hardware module for purchase
3.10 ii)	take into account any potential constraints or costs caused, or resulting from, the imposed IPR arrangements	Yes	The Gendrive design that would result from the work would have results and information on its functionality shared with other Licensees but the specific details of the hardware and software design would remain confidential to Gendrive



3.10 iii) justify why the proposed IPR arrangements provide value for money for consumers	Yes	The Licensees concerned will recover their investment from purchase of the end product as well as receive operational cost reductions and network improvement benefits
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**3 (b) Has the potential to deliver net financial benefits to electricity Customers**

3.11 How does the the method being used have the potential to deliver the Solution at a lower cost than the most efficient Method currently in use on the GB Transmission Systems	The only alternative today is reinforcement
---	---

3.12 i) What is the saving if the problem is solved (i.e. from the PEA(PID))?	£32,000 per site when deployed, through deferral of network reinforcement. Using the IFI PID methodology the NPV is £21000
---	--

3.13 iii) Estimate how replicable the Method is across GB in terms of the number of sites, or the percentage of the GB Transmission System, where it could be rolled-out; and	Approx 600 sites across the UK over a 20 year period
---	--

3.13 iv) Provide an outline of the costs of rollout the Method	£18,000 per site
--	------------------

3.14 Using the PEA (PID) demonstrate how no unnecessary duplication will occur as a result of the project	Very hard to know what commercial plans there are of big commercial players in the market, so this is very difficult to answer
---	--

3.15 **For info**  
 Unnecessary duplication is likely to occur if the new NIA Project is not expected to lead to recognised new learning. Projects that address the same Problem, but use a different Method, will not be considered as unnecessary duplicates. For the avoidance of doubt, Projects that are at different TRLs will not be considered as unnecessary duplicates

3.19 In the case of a Development or Demonstration the Licensee must be able to use the guide to explain the financial benefit of the Project by the following:	
Estimate the costs of delivering the Solution (at the scale being tested within the Project) through the most efficient Method currently in use on the Electricity Transmission System - the Base Case Cost	£50,000 per site thought this question could be answered in many different ways depending on the project
Estimate the costs of replicating the Method, at the scale being tested in the Project, once it has been proven successful - the Method Cost	£18,000 per site

The difference between the Base Case Cost and the Method Cost for a  
**3.20** Development or a Demonstration is the financial benefit of the Project. Where a  
**Note** Licensee is looking to test more than one Method It should outline the financial benefit of each separate Method and the above steps repeated

**3.21** Until the guide is approved the Licensee will only be able to start new Projects with  
**Note** a clear monetary benefit

**Registration process requirements**

3.23 i) Is the Licensee requesting an exemption from the default conditions for the IPR set out in section 7?	Yes/ No No
3.23 ii) Does the Licensee intend to make payments to itself or to Related Undertakings as set out in section 4?	No

If the answer to either of the above questions is yes, approval will need to be sought from OFGEM

3.30 Will the project incur Allowable NIA Project Expenditure	Yes/ No Yes
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Projects that do not incur NIA expenditure a project can still be eligible to receive Allowable NIA Expenditure if the outturn costs and benefits are different from expectation

### 3.1 Registration information

Project Title

Three phase smart LV power converter

Funding Licensee (s)

SSE, SP, ENW

Problem

With the future complexities of increased distributed generation and electrical demand (e.g. heat pumps, EV) the DNOs recognise that they are likely to have issues of low/high voltage swing, more accentuated phase imbalance and increases in harmonics and low power factor. The traditional method of coping would be reinforcement or the deployment of simple analogue voltage regulators. The DNOs are looking for solutions that can be implemented more quickly and at lower cost than reinforcement

Method (s) including whether the method is commercial or technical

The solution being developed by the project is a smart power electronics module, based on know-how developed by Gendrive in the design and manufacture of inverters for wind turbines. The capability has not yet been objectively predicted but it is anticipated that the unit will be able to make voltage corrections, correct phase imbalance by porting power from one phase to another, and perform some power factor correction and harmonic reduction. This is a technical solution.

Scope and Objectives - including the benefits which should directly accrue to the GB Transmission System

The eventual product would be deployed either in roadside cabinets (e.g. urban scenario) or pole mounted in rural areas as required, located part way down an LV feeder avoiding the need for reinforcement

Success Criteria - how will the project measure its success

The first stage of the project is scenario modelling and specification development. This will give a forecast for the objective performance characteristics of the unit, which the project will seek to prove are achievable in the final test stage of the project

Project Partners and external funding - details of actual or project partners and other external funding

There is no external funding on this project

Potential for new learning detailing what parties hope to learn and how the learning will be disseminated

conditions. This will provide invaluable insight into the deployment of this sort of hardware on the LV network and what it is capable of doing as nothing like this has been tried before

Scale of Project - the Licensee should justify the project in particular explaining why there would be less potential for learning if the Project were of a smaller scale

The project only seeks to design/build/test a single unit, it would not be possible to reduce the scale of the project any further

Geographical area, giving details of where the trial (s) will take place and if the Project is collaboration, the Funding Licensee area (s) in which the Trial (s) takes place should be identified

The trial is most likely to take place at the Power Network Demonstration Centre.

# NIA Sample projects - current match of EIC IFI projects with NIA criteria

## Project example - EPIPE



### Specific requirements set 1

Does the innovation involve the Research, Development or Demonstration of AT LEAST ONE of the following :

NIA section ref		Yes/No	How?
3.6	A specific piece of new (i.e. unproven in GB) equipment (including control and communications systems and software) that will have a Direct Impact on the GB Transmission System.	no	
3.6	A novel arrangement or application of existing electricity transmission equipment (including control and communications systems software) that will have a Direct Impact on the GB Transmission System	no	
3.6	A novel operational practice directly related to the operation of the Electricity that will have a Direct Impact on the GB Transmission System	yes	Currently used in America to line the internal pipe wall of lead water pipes.
3.6	A novel commercial arrangement that will have a Direct Impact on the GB Transmission System	no	

### Specific requirements set 2

One of the purposes of the NIA is to allow learning to be shared amongst Licensees  
 The NIA Project must develop new learning that can be applied by all Relevant Network Licensees. However, we recognise that the Licensee may wish to address challenges specific to their network

The project must meet ALL of the requirements below

### 3 (a) Has the potential to develop learning that can be applied across all relevant Licensees

3.8	Could the learning that can be applied by all Relevant Network Licensees?	Yes/No	yes
3.9 i)	How will the learning generated be used by all Licensees <b>OR</b>		Through sharing of reports and results across Licensees
3.9 ii)	What specific challenge in the Licensees innovation strategy is it relevant to		Extending life of assets and reducing cost
3.10	Does the Licensee wish to deviate from the default requirement for IPR in section 7? IF YES it must:	Yes/No	no
3.10 i)	Demonstrate how the learning from the Project can be meaningfully disseminated to network operators and other interested parties	Does it? / How?	yes / This can be used by all Networks, and via Industry Paper presentations and magazines
3.10 ii)	take into account any potential constraints or costs caused, or resulting from, the imposed IPR arrangements		none / There may be a strong influence from the major gas/oil exploration company in the dissemination of this as they sponsored the work to date
3.10 iii)	justify why the proposed IPR arrangements provide value for money for consumers		Reduced initial costs allowing Networks to get their return

### 3 (b) Has the potential to deliver net financial benefits to electricity Customers

3.11 How does the method being used has the potential to deliver the Solution at a lower cost than the most efficient Method currently in use on the GB Transmission Systems

Current system would mean all existing internal gas suppliers feeding high riser buildings having to often replace resulting in scaffold and new meter positions . This method re lines the inside of an existing pipeline with a thick sealant so extending the pipeline life without the previous mentioned disruption

3.12 i) What is the saving if the problem is solved (i.e. from the PEA(PID))?

£1,215,472

3.13 iii) Estimate how replicable the Method is across GB in terms of the number of sites, or the percentage of the GB Transmission System, where it could be rolled-out; and

The number of sites area in the ,000's there is no exact figure of high rise buildings. But we are forecasting a 25% cost saving but could be as much as 50%

3.13 iv) Provide an outline of the costs of rollout the Method

£404,000

3.14 Using the PEA (PID) demonstrate how no unnecessary duplication will occur as a result of the project

UNCLEAR WHAT IS NEEDED HERE

3.15 **For info**  
 Unnecessary duplication is likely to occur if the new NIA Project is not expected to lead to recognised new learning. Projects that address the same Problem, but use a different Method, will not be considered as unnecessary duplicates. For the avoidance of doubt, Projects that are at different TRLs will not be considered as unnecessary duplicates

3.19 In the case of a Development or Demonstration the Licensee must be able to use the guide to explain the financial benefit of the Project by the following:

Estimate the costs of delivering the Solution (at the scale being tested within the Project) through the most efficient Method currently in use on the Electricity Transmission System - the Base Case Cost

Estimate the costs of replicating the Method, at the scale being tested in the Project, once it has been proven successful - the Method Cost

There is an assumption that there would be 5% repair / annum, of existing high rise buildings

£125,000

3.20 The difference between the Base Case Cost and the Method Cost for a Development or a Demonstration is the financial benefit of the Project. Where a Licensee is looking to test more than one Method It should outline the financial benefit of each separate Method and the above steps repeated

3.21 Until the guide is approved the Licensee will only be able to start new Projects with a clear monetary benefit

### Registration process requirements

3.23 i) Is the Licensee requesting an exemption from the default conditions for the IPR set out in section 7?

Yes/ No  
 no

3.23 ii) Does the Licensee intend to make payments to itself or to Related Undertakings as set out in section 4?

yes

If the answer to either of the above questions is yes, approval will need to be sought from OFGEM

3.30 Will the project incur Allowable NIA Project Expenditure

Projects that do not incur NIA expenditure a project can still be eligible to receive Allowable NIA Expenditure if the outturn costs and benefits are different from expectation

Yes/ No  
 yes

### 3.1 Registration information

Project Title

E Pipe internal pipe sealant system

Funding Licensee (s)

NNG, NGN, SGN, & WWU

Problem

There is a high number of high rise building dating from the 1960/70's these have internal gas pipelines that have to be replaced and existing methods are time consuming and expensive.

Method (s) including whether the method is commercial or technical

Using a system from the USA, the pipeline is lined with a thick none corrosive sealant that coats the internal pipe wall, and removes any leak paths. This Project would extend the pipelines life and remove the requirement to fully replace the pipeline. This Project is Technical.

Scope and Objectives - including the benefits which should directly accrue to the GB Transmission System

To fully coat the inside of the pipeline successfully removing leakage path and improving the integrity of the pipeline, and the best Environmental solution.

Success Criteria - how will the project measure its success

A easy to use system that seals the internal pipe walls of Gas system , in a high rise building, within 1 working day so not inconveniencing customer too much.

Project Partners and external funding - details of actual or project partners and other external funding

There is no external funding. A division of Morrison's Utility's are in partnership.

Potential for new leaking detailing what parties hope to learn and how the learning will be disseminated

Project reports, industry literature and Morrison's Utility Commercial Department

Scale of Project - the Licensee should justify the project in particular explaining why there would be less potential for learning if the Project were of a smaller scale

Project has all Gas Networks taking part, and the size has been selected to benefit all at an optimum cost

Geographical area, giving details of where the trial (s) will take place and if the Project is collaboration, the Funding Licensee area (s) in which the Trial (s) takes place should be identified

Trails will take part in Leeds, on Morrison's base, testing will be in Carlisle at Spadedam, Cumbria, on site trails to be selected

# NIA Sample projects - current match of EIC IFI projects with NIA criteria

## Project example - ISCC



### Specific requirements set 1

Does the innovation involve the Research, Development or Demonstration of AT LEAST ONE of the following :

NIA section ref		Yes/No	How?
3.6	A specific piece of new (i.e. unproven in GB) equipment (including control and communications systems and software) that will have a Direct Impact on the GB Transmission System.	No	
3.6	A novel arrangement or application of existing electricity transmission equipment (including control and communications systems software) that will have a Direct Impact on the GB Transmission System	NO	
3.6	A novel operational practice directly related to the operation of the Electricity that will have a Direct Impact on the GB Transmission System	Yes	Testing of a pipeline to inspect for stress cracking that could result in pipeline failure
3.6	A novel commercial arrangement that will have a Direct Impact on the GB Transmission System	NO	

### Specific requirements set 2

One of the purposes of the NIA is to allow learning to be shared amongst Licensees  
 The NIA Project must develop new learning that can be applied by all Relevant Network Licensees. However, we recognise that the Licensee may wish to address challenges specific to their network

The project must meet ALL of the requirements below

### 3 (a) Has the potential to develop learning that can be applied across all relevant Licensees

	Yes/No	How?
3.8 Could the learning that can be applied by all Relevant Network Licensees?	yes	The licensees brought it to EIC attention in order to get a unified approach
3.9 i) How will the learning generated be used by all Licensees <b>OR</b>		Cross Network project that everyone is aware of owing to the potential problems that could occur if not addressed.
3.9 ii) What specific challenge in the Licensees innovation strategy is it relevant to		
3.10 Does the Licensee wish to deviate from the default requirement for IPR in section 7? IF YES it must:	NO	
	Does it?	How?
3.10 i) Demonstrate how the learning from the Project can be meaningfully disseminated to network operators and other interested parties	yes	This is only Gas Network specific so they are already on board and aware of what's happening with the Project
3.10 ii) take into account any potential constraints or costs caused, or resulting from, the imposed IPR arrangements	No	
3.10 iii) justify why the proposed IPR arrangements provide value for money for consumers	No	

### 3 (b) Has the potential to deliver net financial benefits to electricity Customers

3.11 How does the method being used has the potential to deliver the Solution at a lower cost than the most efficient Method currently in use on the GB Transmission Systems

It reduces the cost to individual Networks because of the partnership agreement; the total cost is the same

3.12 i) What is the saving if the problem is solved (i.e. from the PEA(PID))?

78000, although the PID information is irrelevant as there is no cash benefit in real terms

3.13 iii) Estimate how replicable the Method is across GB in terms of the number of sites, or the percentage of the GB Transmission System, where it could be rolled-out; and

This system is to be used across all Networks owing to the benefit it gives

3.13 iv) Provide an outline of the costs of rollout the Method

It is very unclear currently as to what the roll out might be as it very much depends on the results

3.14 Using the PEA (PID) demonstrate how no unnecessary duplication will occur as a result of the project

UNSURE WHAT IS BEING ASKED HERE

3.15 **For info**  
Unnecessary duplication is likely to occur if the new NIA Project is not expected to lead to recognised new learning. Projects that address the same Problem, but use a different Method, will not be considered as unnecessary duplicates. For the avoidance of doubt, Projects that are at different TRLs will not be considered as unnecessary duplicates

3.19 In the case of a Development or Demonstration the Licensee must be able to use the guide to explain the financial benefit of the Project by the following:

Estimate the costs of delivering the Solution (at the scale being tested within the Project) through the most efficient Method currently in use on the Electricity Transmission System - the Base Case Cost

£78000 but question could be answered in many ways

Estimate the costs of replicating the Method, at the scale being tested in the Project, once it has been proven successful - the Method Cost

The cost is one off, so the more Networks the better value for the Networks, all four are taking part (£19,500ach). Carried out individually would result in all Networks paying full amount.

3.20 **Note** The difference between the Base Case Cost and the Method Cost for a Development or a Demonstration is the financial benefit of the Project. Where a Licensee is looking to test more than one Method It should outline the financial benefit of each separate Method and the above steps repeated

3.21 **Note** Until the guide is approved the Licensee will only be able to start new Projects with a clear monetary benefit

**Registration process requirements**

3.23 i) Is the Licensee requesting an exemption from the default conditions for the IPR set out in section 7?

Yes/  
No

No

3.23 ii) Does the Licensee intend to make payments to itself or to Related Undertakings as set out in section 4?

No

If the answer to either of the above questions is yes, approval will need to be sought from OFGEM

3.30 Will the project incur Allowable NIA Project Expenditure

Yes/  
No

yes

Projects that do not incur NIA expenditure a project can still be eligible to receive Allowable NIA Expenditure if the outturn costs and benefits are different from expectation

### 3.1 Registration information

Project Title

Internal Stress Corrosion Cracking

Funding Licensee (s)

NGN, SGN,NGG, & WWU

Problem

Internal Stress Cracking might be present in pipelines dating back to pre 1970's that transported Manufactured Gas, through no longer a problem there could be some pipeline with historic stress cracking present in the pipe wall, this could be made worse with pressure cycling, there have been a number of pipeline failures due to Internal stress cracking.

Method (s) including whether the method is commercial or technical

A software system is to be developed to identify possible future Stress cracking failures. The method is neither commercial or technical

Scope and Objectives - including the benefits which should directly accrue to the GB Transmission System

To test 6 separate sections of pipeline , undertake an internal inspection, identify the Gas manufacturing process used with the pipe sections in question, identify all different types of historical Gas manufacturing process, identify which Transmission pipelines were transporting which type of Gas manufacture process, and then develop an ISCC threat assessment algorithm and associated guidelines.

Success Criteria - how will the project measure its success

Identification of which Gas manufacturing process causes the greater risk to the existing pipeline Network, and identifying the said pipelines.

Project Partners and external funding - details of actual or project partners and other external funding

No external funding on this project

Potential for new learning detailing what parties hope to learn and how the learning will be disseminated

On-going reports from the project and feedback on site during on site trials, following completion

Scale of Project - the Licensee should justify the project in particular explaining why there would be less potential for learning if the Project were of a smaller scale

The project is scaled to benefit the trial and ensure the process works, by having all Networks involved reduces the occasions this development has to be carried out as all will benefit

Geographical area, giving details of where the trial (s) will take place and if the Project is collaboration, the Funding Licensee area (s) in which the Trial (s) takes place should be identified

The trial pipeline has been identified in Lamesley, nr Gateshead, Tyne and Wear, further areas will be identified at a later date, if needed.



# NIA Sample projects - current match of EIC IFI projects with NIA criteria

## Project example - OPTOSCI



### Specific requirements set 1

Does the innovation involve the Research, Development or Demonstration of AT LEAST ONE of the following :

NIA section ref	Yes/No	How?
3.6	yes	Used in situ in underground subways in Hong Kong, to monitor gas escapes. This Innovation is to be modified for mobile use on working gas escapes in UK
3.6	NO	
3.6	NO	
3.6	NO	

### Specific requirements set 2

One of the purposes of the NIA is to allow learning to be shared amongst Licensees  
 The NIA Project must develop new learning that can be applied by all Relevant Network Licensees. However, we recognise that the Licensee may wish to address challenges specific to their network

The project must meet ALL of the requirements below

### 3 (a) Has the potential to develop learning that can be applied across all relevant Licensees

	Yes/No	How?
3.8 Could the learning that can be applied by all Relevant Network Licensees?	yes	
3.9 i) How will the learning generated be used by all Licensees <b>OR</b>		Gas escape location is a problem this will speed the process up. Discussions and Base camp allows full vision across Networks
3.9 ii) What specific challenge in the Licensees innovation strategy is it relevant to		
3.10 Does the Licensee wish to deviate from the default requirement for IPR in section 7? IF YES it must:	yes	
3.10 i) Demonstrate how the learning from the Project can be meaningfully disseminated to network operators and other interested parties	yes	Understanding of the project and the final availability of the idea when completed
3.10 ii) take into account any potential constraints or costs caused, or resulting from, the imposed IPR arrangements	yes	Could restrict the manufacture as IPR constraints on Background IPR can effect the project going ahead owing to manufacturing overheads

3.10 iii) justify why the proposed IPR arrangements provide value for money for consumers

yes	Return on investment would be sooner so reduces the risk to the Networks, so supporting future Innovation in the business.
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**3 (b) Has the potential to deliver net financial benefits to electricity Customers**

3.11 How does the method being used have the potential to deliver the Solution at a lower cost than the most efficient Method currently in use on the GB Transmission Systems

This method would speed up the identification and location of an escape saving time, money and inconvenience to third parties
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3.12 i) What is the saving if the problem is solved (i.e. from the PEA(PID))?

2,730,231
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3.13 iii) Estimate how replicable the Method is across GB in terms of the number of sites, or the percentage of the GB Transmission System, where it could be rolled-out; and

This system could be rolled out across all Networks and any contractor who works on gas escapes
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3.13 iv) Provide an outline of the costs of rollout the Method

£25,000/system
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3.14 Using the PEA (PID) demonstrate how no unnecessary duplication will occur as a result of the project

UNSURE WHAT IS BEING ASKED
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**3.15 For info**

Unnecessary duplication is likely to occur if the new NIA Project is not expected to lead to recognised new learning. Projects that address the same Problem, but use a different Method, will not be considered as unnecessary duplicates. For the avoidance of doubt, Projects that are at different TRLs will not be considered as unnecessary duplicates

3.19 In the case of a Development or Demonstration the Licensee must be able to use the guide to explain the financial benefit of the Project by the following:

Estimate the costs of delivering the Solution (at the scale being tested within the Project) through the most efficient Method currently in use on the Electricity Transmission System - the Base Case Cost

£194000 though could be answered in many different ways
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Estimate the costs of replicating the Method, at the scale being tested in the Project, once it has been proven successful - the Method Cost

£25000 per system, but this question could be answered in many ways
---

**3.20 Note** The difference between the Base Case Cost and the Method Cost for a Development or a Demonstration is the financial benefit of the Project. Where a Licensee is looking to test more than one Method It should outline the financial benefit of each separate Method and the above steps repeated

**3.21 Note** Until the guide is approved the Licensee will only be able to start new Projects with a clear monetary benefit

**Registration process requirements**

3.23 i) Is the Licensee requesting an exemption from the default conditions for the IPR set out in section 7?

Yes/ No
No

3.23 ii) Does the Licensee intend to make payments to itself or to Related Undertakings as set out in section 4?

No
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If the answer to either of the above questions is yes, approval will need to be sought from OFGEM

3.30 Will the project incur Allowable NIA Project Expenditure  
Projects that do not incur NIA expenditure a project can still be eligible to receive Allowable NIA Expenditure if the outturn costs and benefits are different from expectation

Yes/ No
yes

### 3.1 Registration information

Project Title

Optical Gas Leak detecting system in cable ducts

Funding Licensee (s)

NGN, SGN,NGG, & WWU

Problem

Locating a gas escape that has been reported in cable ducts is difficult to find, traditionally Operational teams had to locate where the gas escaped from the cable duct by excavating in the footpath, which wasn't always where the escape was, this innovation would identify the location where the gas is entering the ducts so giving a closer location to where the gas is escaping. So reducing team and the number or size of excavations.

Method (s) including whether the method is commercial or technical

The method is using an existing system and modifying it to be used outside, and allowing it to be transferred between sites. The method is Technical.

Scope and Objectives - including the benefits which should directly accrue to the GB Transmission System

The final objective would be to have a stand alone unit, that can be use on many different gas escapes to help locate gas escapes. Long term would have some areas with 2 or 3 units available owing to the potential saving that have been highlighted in the PID/PPF.

Success Criteria - how will the project measure its success

A reduction in excavation costs and time spent on site locating the Gas escape.

Project Partners and external funding - details of actual or project partners and other external funding

No external funding on this project

Potential for new learning detailing what parties hope to learn and how the learning will be disseminated

On-going reports from the project and feedback on site during on site trials, following completion it could be used for the constant monitoring of sites, discussions to be rolled out from the Project Manager to other outside bodies. i.e. HSE, IGEM

Scale of Project - the Licensee should justify the project in particular explaining why there would be less potential for learning if the Project were of a smaller scale

The project is scaled to benefit the trial and ensure the process works, once its been demonstrated then future trials can be adopted.

Geographical area, giving details of where the trial (s) will take place and if the Project is collaboration, the Funding Licensee area (s) in which the Trial (s) takes place should be identified

The trial will probably take part in Scotia as the Company developing the idea are based there and will reduce travel and unnecessary over night costs.