

## The Electricity System Operator Innovation Roll-Out Mechanism: Guidance on Submissions

Special Condition (SpC) 4J of National Grid Electricity Transmission's (NGET's) transmission licence (the Licence) sets out the process in respect of the system operator innovation roll-out mechanism (SO-IRM). This document provides guidance to stakeholders about the process that the Authority will follow in assessing any applications made through this mechanism. The criteria for assessing applications are set out in Special Condition 4J. All applications must be made by serving a notice on the Authority containing the relevant information as set out in SpC 4J of the Licence. This notice may take the form of the [pro forma](#) as referred to below.

The document is set out as follows:

**Part 1: Background** – outlining the reasons for the introduction of the SO-IRM, and how the SO-IRM will work.

**Part 2: Application process** – explaining the timings for applications and the process for evaluation by Ofgem.

**Part 3: Pro-forma guidance** – describing the content that needs to be provided in NGET's application.

**Part 4: Award notification** – explaining how Ofgem will make its decisions regarding funding.

**Part 5: Funding recovery and monitoring process** – explaining the process for successful applications after any funding is granted.

### Part 1: Background

The SO-IRM is designed to provide the system operator (SO) with an incentive to implement innovative techniques. The mechanism supports this by providing up to £10 million of funding for the roll-out of proven innovations. Under the mechanism, NGET would have to demonstrate that the innovation would not be cost effective under a business-as-usual approach. NGET would also have to demonstrate that benefits may arise after the end of the two year balancing services incentive scheme (BSIS).

The method that will be used to assess whether the innovation is 'proven' is the Technology Readiness Level (TRL) measure as set out below. Under this measure a proven technology will be classed as TRL 9.

### Technology Readiness Level (TRL)

This is the measure used to assess the maturity of evolving technologies. The TRL measure is graded on a scale from 1 to 9 (see below). The terms 'proven' and 'late stage' are used to refer to innovations that are understood to be at Technology Readiness Level 9.

- **TRL 1:** Pure research that is theoretical or experimental work undertaken to acquire new scientific or technical knowledge for its own sake rather than directed towards an application
- **TRL 2-3:** Applied research driven by a desire to broaden scientific and technical knowledge for application on the network, related to an identified problem. It typically includes investigating the underlying foundation of phenomena and observable fact
- **TRL 4-6:** Development activities with a more commercial application including technology validation and or demonstration in a working environment
- **TRL 7-8:** Full scale demonstration in a working environment to test and improve technologies so they are ready for commercial deployment
- **TRL 9:** Application of technology in its final form, i.e. the technology has been proven.

The aim of the SO-IRM is to provide the SO with a funding mechanism to enable the implementation of innovative techniques that would otherwise go beyond business-as-usual behaviour. Innovation of this type would have an impact beyond the two year time horizon of the incentive scheme.

When the SO-IRM was introduced as part of the 2013-15 incentive scheme we looked to ensure consistency and to take lessons from other innovation funding mechanisms already available under the RIIO framework<sup>1</sup>. The three key funding mechanisms introduced under the RIIO innovation package are the:

- Network Innovation Competition (NIC);
- Network Innovation Allowance (NIA); and
- Innovation Roll-Out Mechanism (IRM).

The NIC and NIA offer funding for the development of relatively early stage innovations with TRLs between two and eight. Through RIIO-T1, both transmission owners and the SO can apply for funding under these mechanisms. The IRM enables companies to apply for additional funding, within the price control period, for the roll-out of initiatives with demonstrable and cost effective low carbon and environmental benefits. However, this RIIO mechanism is targeted solely at the transmission owners, and the SO is not able to apply for this funding.

The SO-IRM thus complements other innovation mechanisms introduced under RIIO by focussing on the funding of proven innovation, which the SO would not otherwise implement, within the two year length of its incentive scheme, because costs would fall outside those agreed as part of the BSIS. Under the mechanism the SO is able to apply for up to £10m funding for the roll out of three innovative techniques.

It is important to note that while we have looked to ensure consistency and take lessons from the RIIO innovation package, the SO-IRM does not set any precedent for the design of any process or evaluation criteria of the RIIO-T1 IRM mechanism. Indeed, differences in the design of the regulatory framework for the SO and TO parties mean that there will be some inevitable differences in the design of the process.

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<sup>1</sup> RIIO (Revenue = Incentives + Innovation + Outputs) is Ofgem's framework for setting price controls for network companies. RIIO-T1 is an eight year price control set on the transmission owners until 31 March 2021.

## **Part 2: Application process**

The opportunity to apply for funding through the SO-IRM will be available to the SO at the start of the first year of the SO incentive scheme (2015-17). Applications for 2015/16 must be received by 1 July 2015 if costs are to be allocated within that year. Applications received after this date, and that are subsequently approved, will have their costs allocated within 2016/17. The final date in which an application can be received for the current incentive scheme period is 31 March 2016. Any decision on approval of funding under the mechanism will be published by the Authority within 3 months of receiving the application.

Special Condition 4J of NGET's transmission licences includes the criteria against which we will assess applications for funding. Any decision taken by the Authority will reflect its assessment of the submission against these criteria. Part 3 of this document expands on the evaluation criteria and provides further guidance about the information that should be provided to inform our assessment against them. Any application must be made by serving a notice on the Authority containing the relevant information as set out in SpC 4J of the Licence.

Ofgem may request a preliminary meeting ahead of the submission deadline to discuss the nature of any applications which the SO is expecting to make.

Ofgem also expects to request meetings with the SO to discuss the content of its submission(s), and may ask for further supplementary information to be provided if the application is deficient. The failure of the SO to provide adequate information for Ofgem to complete its assessment would result in an application being rejected.

Ofgem will consider appointing consultants to review the application and provide additional evidence to consider in developing a recommendation for the Authority. Any appointed consultants may also request further communication with the SO regarding the content of submissions.

The Authority will not consider funding the roll-out of an innovation that has already been funded under the NIC or NIA. This will ensure that the SO continues to identify new innovations that require initial funding support to deliver additional benefits with a longer time frame than the current BSIS. Once the SO has been funded for earlier stages of innovation under the NIC or NIA, we would expect it to have sufficient experience and understanding of the innovation to identify the additional benefits and decide whether to proceed to roll-out without the need for further funding support. Further, Ofgem is unlikely to consider funding the roll-out of an innovation that has been unsuccessful at the application stage under the NIC or NIA. This will protect against the risk of repeated evaluation of the same innovation, and will motivate the SO to identify the most appropriate innovations and funding mechanisms, considering new innovations rather than attempting to fund non-optimum innovation in multiple ways.

## **Part 3: Completing the pro-forma**

Please use the default font (Verdana size 10) when completing the pro-forma. It is up to NGET to decide how much information to include under each section, but each section should not exceed the stated maximum number of pages.

We would not expect the pro-forma (without appendices) to exceed 20 pages in total. We would not expect total submission of the pro-forma and appendices to exceed 30 pages.

## **Section 1: Application Summary**

### 1.1 Application title

Please give the submission a title for future reference and to distinguish it from any other applications.

### 1.2 Estimated total cost

This is the amount that NGET expects to spend on the whole roll-out.

### 1.3 Total funding request

This is the amount being requested for funding under the SO-IRM.

### 1.4 Start date

### 1.5 End date

### 1.6 Application summary

We would not expect this section to exceed two pages.

This section should outline the issue or improvement that the roll-out is designed to target. It should clearly identify the proven innovation and the desired impact.

## **Section 2: Application Description**

We would not expect this section to exceed 3 pages.

Building on the application summary, this section should provide a more detailed high level description of the roll-out. This should be presented in a manner that enables someone with limited experience of electricity system operation to understand the material, and should focus on:

- The issue or improvement that the roll-out of proven innovation will address;
- The proven innovation that the SO plans to roll-out to resolve this issue;
- The expected outcome of the roll-out; and
- The criteria that would need to be met to adopt the project approach into normal business and the assessment of these to give an understanding of the viability of the innovation over the long term once funding through the mechanism ends.
- The ultimate impacts of the roll-out on consumers after implementation.

This section should also include a technical description which complements the high level description and provides greater depth at a more expert level.

## **Section 3: Application business case**

We would not expect section to exceed 4 pages.

NGET must present a clear business case justifying the merits of undertaking the roll-out and must set out how it links to changes it wants to make to its business in the long term.

In addition, this section should also include:

- i. An analysis of how the total costs are estimated, and the potential inaccuracies in this figure (supplementary information can be provided in the appendices);
- ii. How the SO will recover any granted funding through balancing services use of system (BSUoS) charges; and
- iii. How the SO will ensure that the timing of apportioning these costs will be appropriately reflected in BSUoS charges and that only costs incurred in the period 1 April 2015 to 31 March 2017 will be recovered.

## Section 4: Evaluation Criteria

We would not expect this section to exceed 11 pages.

We set out more detail surrounding how the Authority will assess any application against the evaluation criteria below. A submission will have to provide sufficient information to convince the Authority that each of the evaluation criteria has been satisfied. There will be a high threshold for the award of any funding, and NGET will need to provide a convincing business case and robust information against each of the below criteria.

The criteria will be inclusive of but not limited to the following and NGET will need to demonstrate that the roll-out:

### **a) will deliver additional carbon, environmental or any other wider benefits**

The Authority will assess whether the application has clearly demonstrated the additional carbon, environmental or wider benefits against the following criteria:

#### **i. Carbon benefits:**

- How the roll-out will make a contribution to the Government's current strategy for reducing greenhouse gas emissions, as per the document entitled "the Carbon Plan<sup>2</sup>" published by DECC.  
In particular the application should explain what aspect of the Carbon Plan the innovation will facilitate and how it will do this. The application should also explain how the innovation will deliver additional benefits in greater volume and/or faster than the most efficient alternative currently in use in GB.

#### **ii. Environmental benefits:**

- How the roll-out will deliver wider additional environmental benefits to customers. In particular the application should evidence and reference calculations that demonstrate the additional environmental benefits. A qualitative explanation and estimated quantification (including a simple methodology) of the environmental benefits should be included in the application.

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<sup>2</sup> The Carbon Plan: Delivering Our Low Carbon Future December 2011.

[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/47621/1358-the-carbon-plan.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/47621/1358-the-carbon-plan.pdf)  
Where this document is amended or replaced by Government, Ofgem will notify the Licensee of any changes in writing.

**iii. Wider benefits**

- How the roll-out will deliver wider additional benefits to customers. In doing this please provide. A qualitative and quantitative explanation of the wider benefits should be included.

**iv. Ex-post evaluation of carbon, environmental and wider additional benefits**

- The process that will be employed to evaluate whether the rollout is has delivered the carbon, environmental and wider additional benefits stated in the application.

**b) will provide long-term value for money for electricity consumers**

The authority will assess whether the application explains how the scheme provides long term value for electricity consumers against the following criteria:

**i. Costs & benefits**

The SO should set out an explanation of the business case for the investment. It should include:

- A description of the potential additional benefits that are expected from the innovation. This may also include estimates of the financial returns.
- The timeline expected for these additional benefits to materialise.
- Explain the costs of the project over the period.
- Include any benchmark information and explain how these affect the parties involved.
- Set out the usage and pricing assumptions that set out the business case.
- A justification that the scale/cost of the roll-out is appropriate in relation to the additional benefits that are expected to be captured.
- Any additional benefits to the TO role of the licensee.
- What expected proportion of the additional benefits will accrue to the operation of the system as opposed to other parts of the energy supply chain, and what evidence has been used to derive the proportion of expected additional benefits.
- Whether prices have been finalised and if not when it is anticipated these will be concluded. The level of price

expected to be seen in the negotiations along with evidence to show the likely range of prices.

- Why it is considered that the SO-IRM is the most appropriate source of funding for this project (E.g. compared to the NIA or NIC)?

**ii. Impact on electricity operations**

- How the roll-out will have a direct impact on electricity system operations. E.g. A detailed description of how the innovation will reduce network constraints.
- The approach to ensure that the business adopts the investment

**iii. Project governance – How the project is going to be governed**

- How any project partners have been identified and selected including details of the process that has been followed and the rationale for selecting project participants and ideas for applications.

**iv. Ex-post evaluation of the project – How the SO plan to assess whether the innovation has been successful?**

- The process that will be employed to ensure that the roll-out is delivered at a competitive cost.
- Once the roll-out has been implemented, how will it be demonstrated that the innovation has been successful?

**c) Will not lead to the SO receiving additional commercial benefits which are greater or equal to the cost of implementing the Proven SO Innovation**

Using the following criteria, evidence detailing why the SO will not receive any commercial benefits from the innovation.

The SO must explain:

**i. Costs**

- The financial impacts on the current scheme, and whether funding will cause greater/lesser costs to be incurred under the current incentive package;
- The implications for any other areas of the SO's businesses;

- The measures NGET will employ to minimise the possibility of cost overruns or shortfalls resulting in indirect additional benefits;
- How it will ensure that only those costs incurred up to the maximum funding allowance will be passed through to BSUoS charges
- How it will ensure that only those costs incurred up to the maximum funding allowance will be passed through to BSUoS charges.
- The relationship between the total amount requested for funding and the total cost of the roll-out, referencing the above criteria.

**ii. Ex-post evaluation of additional commercial benefits**

- How the cost that is incurred under the SO-IRM can be managed and reported to Ofgem (for example a separate account that manages funding for each application)

**d) Will not be used to fund any of the ordinary business arrangements of the licensee**

The Authority will assess whether the SO has evidenced that roll-out will not fund any ordinary business arrangements and will use the following criteria when making that assessment:

**i. Innovation roll-out costs**

- An explanation of how roll-out funding will be kept separate from business-as-usual expenditure; and

**ii. Ex-post evaluation of funding**

- A description of the means by which costs associated with the roll-out and use of any funding will be tracked.

**Please note that we also encourage applications to address how the innovation will enhance competition within the market. Information to consider include:**

**i. Additional Benefit to the market**

- Explanation of the potential market for the innovation, giving details of the potential size, scope and how this would be realised.
- Provide a description of how competition in this market will evolve as a result of the roll-out of this innovation and any potential arrangements that could limit this.



**ii. Ex-post assessment**

- Details should be provided on how the SO will quantify how the innovation has enhanced competition within the market.

Consistent with Special Condition 4J, to receive funding for any application, the SO must also demonstrate that the roll-out:

**a) involves proven innovation and warrants limited funding support**

The Authority will assess whether the application is for an innovation that is proven and requires limited funding and the following criteria should be followed when providing this evidence:

**i. Funding requirement – Outside business-as-usual**

- The roll-out is innovative and is not viable under business-as-usual operations within the current BSIS;
- The roll-out can only be undertaken with the support of the SO-IRM, including reference to the specific risks e.g. commercial, operational, or regulatory associated with the roll-out.

**ii. Technology Readiness level - Evidence**

- i. The innovation is considered to be TRL9

**b) is ready to be rolled-out with any funding provided being used in the period from 1 April 2015 to 31 March 2017**

The Authority will assess whether the innovation is ready to be rolled-out and that funding will be for the 2015-17 scheme period based on the following criteria:

**i. Project plan**

- A detailed project plan including timeframes and evidence that these can be achieved;
- The resources (human, IT etc) that will deliver the roll-out, which should be of a sufficient size and quality to be reasonably expected to ensure its delivery

**ii. Risk**

- An identification of all appropriate risk mitigation processes, including:
  - a risk register;
  - risk management and mitigation plans; and
  - contingency plans

## Section 5: Regulatory issues

We would not expect this section to exceed 2 pages.

NGET must explain whether it believes the proposed roll out will require;

- a derogation or any other decision (from the Authority) under any relevant licence provision; or
- changes to the regulatory arrangements

In addition, the SO should also raise any potential negative impacts on customers, and any financial or logistical implications on generators and suppliers, that may result from the proposed roll-out. The SO should also set out any consultations or discussions it has had with customers regarding the roll-out.

Any expected requirement for a derogation or change to regulatory arrangements will be taken into account by the Authority when deciding on whether to approve funding for any applications.

## Section 6: Appendices

We would not expect this section to exceed 10 pages.

In the event that technical detail of a type not provided for in the pro-forma is necessary, NGET should submit this in appendices, listing the titles and a very brief summary of the content.

The SO is free to include any further supplementary information it wishes in the appendices. Below are some examples of what could be included in the appendices:

- Any diagrams to help explain the technical detail of the roll-out;
- A project organogram;
- Further detail on the methodology that the SO has used to calculate the costs.

### Part 4: Award notification

When issuing any directions under SpC 4J the Authority will give notice to the licensee of all the values that it proposes to direct. We will also publish the Authority's decision on our website no later than 30 days after receiving an application. In this decision, we will provide a brief summary of each submission received, will state our determination on whether the applications have met the evaluation criteria, and will state the approved maximum amount of funding that can be recovered by the SO through BSUoS charges.<sup>3</sup>

Ofgem will also provide an indication of when and how the SO's recovery of funding through BSUoS charges will impact on consumer bills.

### Part 5: Funding Recovery and Monitoring Process

A condition of funding being granted by the Authority will be that the funding is spent in a manner consistent with the application. Ofgem will actively monitor the roll-out of funded

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<sup>3</sup> Any funding allowance will be reflected by a change to the value of ROVt in table 1 of Special Condition 4J.

innovation projects to certify that funding is being spent in this way. If this condition is not met then the Authority may disallow any costs deemed as having been incurred in a manner outside that proposed in the original submission.<sup>4</sup>

A further condition of funding being granted by the Authority is that the SO will provide a detailed report at the end of the funding period for any approved roll-out (i.e. 31 March 2017). This report should provide the following information:

1. General progress of the roll-out against the original plan;
2. A summary of progress against the budget, and the track record of the financial expenditure of the roll-out;
3. Any overruns or unfinished aspects of the roll-out; and
4. Any other information that the SO wishes to include in the report which should be considered by Ofgem in understanding the progress and expected **additional** benefits of the roll-out.

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<sup>4</sup> These conditions will be issued subject to paragraph 4J.12(b) of Special Condition 4J.