



# RP7 - NIE Networks Price Control 2025-2031

Draft Determination Annex N  
Innovation  
November 2023



## About the Utility Regulator

The Utility Regulator is the economic regulator for electricity, gas and water in Northern Ireland. We are the only multi-sectoral economic regulator in the UK covering both energy and water.

We are an independent non-ministerial government department and our main duty is to promote and protect the short- and long-term interests of consumers.

Our role is to make sure that the energy and water utility industries in Northern Ireland are regulated, and developed within ministerial policy, as set out in our statutory duties.

We are governed by a Board of Directors and are accountable to the Northern Ireland Assembly.

We are based at Queens House in Belfast. The Chief Executive and two Executive Directors lead teams in each of the main functional areas in the organisation: CEO Office; Price Controls, Networks and Energy Futures; and Markets and Consumer Protection.



### Our mission

To protect the short- and long-term interests of consumers of electricity, gas and water.



### Our vision

To ensure value and sustainability in energy and water.



### Our values

- Be a best practice regulator: transparent, consistent, proportionate, accountable and targeted.
- Be professional – listening, explaining and acting with integrity.
- Be a collaborative, co-operative and learning team.
- Be motivated and empowered to make a difference.



## Abstract

This annex forms part of the Draft Determination for the NIE Networks RP7 Price Control. It provides a review of NIE Networks innovation proposals and how best the Utility Regulator (UR) can support innovation within its current vires. It also details the past approach, business plan requests, and UR assessment of these requests as well as the resulting UR proposals for RP7.

## Audience

Industry, consumers, statutory bodies as well as potential funding bodies.

## Consumer impact

Innovation will be required to reduce carbon emissions, improved performance and improve the service to consumers. This could include savings for customers in the form of reduced network reinforcement allowances and new practices that are a step change towards net zero and increase efficiencies by NIE Networks.



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# Executive Summary

The purpose of this report is to summarise the key considerations around innovation and how the Utility Regulator intends to support innovation by NIE Networks. This annex reviews the background of the past RP6 innovation and its outcomes to date. We consider NIE Networks proposals and our views on the baseline proposals and the innovation fund proposed by NIE Networks. We also outline our proposed RP7 innovation framework and provide draft decisions.

NIE Networks proposed an updated innovation framework for RP7. This includes provision of funding through two mechanisms, a baseline ex-ante funding of £8.8m to deliver innovation projects and a Network Innovation Fund (NIF) of up to £10.3m provided through a re-opener mechanism. We comment on each of the innovation projects requested and have provided a draft determination.

We considered the need, costs, potential benefits, innovative nature and risks of each of the projects and have recommended an allowance of £4.7m of the £8.8m requested from the baseline projects. It should be noted that any project not approved as part of our final determination can be reconsidered at a later date if further detail and justification is provided.

Regarding the NIF, while we do not have concerns with NIE Networks request to access additional funds through a re-opener, we did have some concerns with an Innovation Council and their role in funding process. It is NIE Networks who is accountable under their licence and therefore should be NIE Networks that puts forward any recommendations for additional funding.

NIE Networks has requested supplementary funding of up to £10.3m provided through a re-opener mechanism. From looking at the innovation fund in RP6 and considering past spend to date and the level of underspend, we have identified an indicative figure of £4m. However, we are not proposing a cap on this re-opener.

It is our view not to restrict NIE Networks from submitting any clearly justified proposals that will add value for consumers. We also consider it appropriate to have annual reporting on innovation and one re-opener window for requesting new innovation projects at the mid-point of the price control.

We will welcome any application to the UR demonstrating how the project aligns with core aims detailed in the Energy Strategy - secure, affordable and clean energy for current and future generations, as well as demonstrating how the project will contribute to the achievement of net zero carbon and a reduction in fossil fuel usage.

# 1. Introduction

- 1.1 Innovation is developing new technologies and ways of working to unlock enduring benefits. It should also help enable NIE Networks to facilitate decarbonisation at least cost for consumers.
- 1.2 NIE Networks proposes an updated innovation framework for RP7. This includes provision of funding through two mechanisms:
- a) Baseline ex-ante funding of £8.8m to deliver innovation projects that have been identified in the RP7 business plan.
  - b) Supplementary funding of up to £10.3m provided through a re-opener mechanism known as the Network Innovation Fund (NIF).
- 1.3 To help inform these proposals, NIE Networks and their consultants (WSP) submitted an innovation strategy, review of GB developments and an innovation benchmarking paper. They also submitted individual business cases for the baseline funding request.
- 1.4 This annex gives further detail of our analysis and considerations around innovation. It includes the following sections:
- Review of RP6 framework and outcomes.
  - RP7 approach to flexibility for future projects.
  - Proposals for RP7 ex-ante allowances.
- 1.5 As part of the analysis, we also consider the future reporting framework and how best to capture benefits for customers.

## 2. RP6 Innovation

### Background

- 2.1 Within the RP6 price control, NIE Networks requested funding in the region of £7.9m<sup>1</sup> for innovation projects. At the final determination our conclusion was that the case had not been properly demonstrated. We stated,
- “the economic case for and the design of the various trials proposed by the company to inform future investment strategies is not yet adequately developed. We have therefore included a re-opener mechanism to allow capital allowances for this work to be determined once sufficient information is available, up to a limit of £6.36m [2015-16 prices].”<sup>2</sup>
- 2.2 We had reservations regarding scheduling, choice of technology and the range of the trials. For this reason the allowance was held in abeyance pending further information from NIE Networks.
- 2.3 In the RP6 final determination we set out a series of questions to address the shortfall of information. NIE Networks submitted its response on 15 January 2018. This prompted an allowance by the UR in July 2018 via the innovation re-opener mechanism.
- 2.4 The RP6 business plan request and the UR allowance by project is set out in Table 2.1 below.

Innovation Project	RP6 Request (£m)	UR Re-opener Allowance (£m)
Demand Side Response (DSR) <sup>3</sup>	£1.57m	£1.50m
LV Active Network Management (ANM)	£1.93m	£1.85m
Facilitation of Energy Storage Solutions	£0.36m	£0.36m
Smart Asset Monitoring (SAM)	£1.39m	£1.38m
Voltage Management (VM) Integration	£2.67m	£2.55m
Totals	£7.91m	£7.65m

**Table 2.1: RP6 innovation allowance in 2021-22 prices**

- 2.5 The basis of the re-opener allowance was due to be in line with paragraph 9.43 of the RP6 position which stated;

“we have concluded that the innovation funding should not be subject to gain-share under the 50:50 cost risk sharing mechanism. Any aggregated

<sup>1</sup> All figures in this annex are given in 2021-22 prices unless otherwise stated.

<sup>2</sup> See RP6 final [determination](#), para 9.57, p197

<sup>3</sup> Subsequently renamed the FLEX project.

out-performance on this programme of work should be applied by NIE Networks to additional trials. If not, it will be considered as deferral leading to a prefunded allowance in the next price control. This will ensure that the trials and innovation work funded by consumers is not constrained by conservative estimates. Conversely, the company will be required to complete the trials and innovation work agreed for RP6 and any over-run of cost will be subject to the 50% cost risk sharing mechanism.”

- 2.6 The uncertainty mechanism approval recognised that such asymmetric treatment would require a licence modification. To date, this change has not been enacted.
- 2.7 We approved further monies in 2022 to deliver an Electric Vehicle (EV) Managed Charging project under the Green Recovery initiative. However this is outside the scope of the review, being approved under a different capital project.

## Outcomes

- 2.8 Up to the most recent financial year data available (2022-23), NIE Networks were reporting spend of £4.0m against the RP6 innovation allowance. The business plan submission does however expect the full allowance (and more) to be utilised in the period.

	RP6					
	2018-19 (£m)	2019-20 (£m)	2020-21 (£m)	2021-22 (£m)	2022-23 (£m)	Total (To-date)
RP6 Allowance	2.86	2.86	1.92	0.00	0.00	£7.65m
RP6 Actuals	0.00	0.14	0.62	2.08	1.16	£4.00m

**Table 2.2: RP6 innovation spend versus allowance in 2021-22 prices**

- 2.9 Within the RP6 price control period the company advised that it:
- Adopted a ‘fast follower’ approach to innovation, taking onboard innovations that had been trialled and deployed elsewhere, evaluating new technologies and processes within its own network and transitioning them into business-as-usual (BAU).
  - Focused on innovations that would defer or avoid network reinforcement by deploying alternative flexible solutions, due to the benefits they offer.<sup>4</sup>

<sup>4</sup> Innovation funding design and benchmarking paper, WSP, p3.



- 2.10 NIE Networks have suggested that the RP6 programme will deliver c. £10.9m in savings in the RP7 period. NIE Networks has advised that they have been able to reduce the ex-ante RP7 capital request because of the investment in innovation.
- 2.11 The expected savings are mainly derived from deferred primary substation reinforcement works (c. £7.5m) through utilising customer flexibility. Further savings are also expected via optimising network voltages and managing / reducing peak network demands so that reinforcement can be delayed.
- 2.12 Whilst the FLEX project has successfully procured services which the projected savings are based on, NIE Networks has recognised that this benefit is subject to risk. This includes both technical and economic risks.
- 2.13 Technically, there is a risk that sufficient capacity (both MW and MWh) will not be available within the required electrical zone (geographic area). There is also the economic risk that the flexibility services are more expensive than assumed.<sup>5</sup> Given these risks, the stated benefits may be lower than expected if conventional reinforcement cannot be avoided.

## **UR views**

- 2.14 RP6 represented the first significant allowance dedicated to network innovation. NIE Networks has indicated that this has facilitated significant learning in delivering innovation projects and transitioning their outcomes into BAU activity.
- 2.15 A complete analysis of the RP6 innovation programme is not yet possible. Trials are not yet complete and reporting of specific project activity has been somewhat limited. This needs to be substantially enhanced for the RP7 regulatory period.
- 2.16 Inclusion of deferred investment savings is a welcome outcome from the FLEX project. However, by the company's own admission, the scale of these benefits is uncertain. More importantly, the RP6 learnings and benefits from other projects are not obvious from the business plan.
- 2.17 The key conclusion from the current period is that much more needs to be done to demonstrate the learnings from this investment. This is particularly true where the consumer takes the risk by funding projects upfront whilst NIE Networks are unable to provide any robust information on the benefits.

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<sup>5</sup> NIE Networks response to business plan query UR-0376.

## 3. RP7 Approach to Innovation

### NIE Networks proposals

- 3.1 NIE Networks has submitted proposals for the regulatory treatment and quantum of innovation funding. These proposals are supported by a set of Engineering Justification Papers (EJPs) assessing the business case of each innovation project included in the proposed baseline allowance.
- 3.2 The proposals are supported by consultant reports on:
- a) Proposed regulatory treatment and level of funding, informed by a review of innovation funding approaches in other jurisdictions.
  - b) Features of the main innovation projects undertaken in GB in RIIO-1, including the regulatory treatment.
- 3.3 NIE Networks estimates that learnings from the funding provided in RP6 has led to savings of £10.9m in the reinforcement cost requested in the RP7 business plan. Their conclusion is that this demonstrates the benefit of an innovation funding allowance in the price control.
- 3.4 NIE Networks is requesting a total of £19.1m to fund network innovation projects during RP7, split between:
- a) An ex-ante baseline allowance of £8.8m; and
  - b) A re-opener that can be triggered in-period to release up to £10.3m of additional funding.
- 3.5 The total request (£19.1m) is c. 150% higher than the RP6 innovation allowance. According to NIE Networks, this increase is driven by the need to undertake investments that would facilitate “net zero through a flexible and integrated energy system” and “meet the challenges presented by the energy transition”. As in RP6, the proposal would account for 2.12% of the investment plan.
- 3.6 NIE Networks reports that most stakeholders it consulted were supportive of the baseline innovation funding being at least £8.8m. Stakeholders were split between the views that (i) £20m or 2% of network investment was an appropriate level of funding and that (ii) more should be invested, up to a maximum of £40m.
- 3.7 In terms of the re-opener mechanism, this would give NIE Networks access to an additional £10.3m of funding for new initiatives that are identified during RP7. The need to use innovative solutions to prevent them from becoming a blocker of the energy transition requires them to increase the scale and pace

of innovation. This means being able to respond appropriately taking forward projects with lower Technology Readiness Levels (TRL).

- 3.8 To access these additional funds, NIE Networks suggest a request at the end of each financial year, which would be followed by a ‘light touch review’ from UR and a decision on whether to release any additional funds. NIE Networks is proposing an ‘exceptional circumstances’ provision under which it can submit an urgent funding request outside of the annual window.
- 3.9 They are proposing not to have a revenue sharing mechanism for any underspend on projects under the NIF. Any unused funds would be recycled to “deliver further innovation projects or initiative”.
- 3.10 Table 3.1 below list the eligibility criteria for additional NIF funding proposed by NIE Networks.

Essential Criteria	Preferred Criteria
<ul style="list-style-type: none"> <li>• Provide customer benefit and reduce customer costs.</li> <li>• Avoid any unnecessary duplication and repetition.</li> <li>• Demonstration of innovative nature.</li> <li>• Clear justification on value-added benefits vs cost and benefits it brings to the existing and future customers.</li> <li>• Enabler for the transition to a net-zero economy.</li> <li>• For more complex projects, they should not create market interference unless this drives a more efficient outcome for customers.</li> <li>• More complex projects should include strong methodologies and realistic achievable timescales.</li> </ul>	<ul style="list-style-type: none"> <li>• Assisting vulnerable and/or fuel poor customers in the energy transition.</li> <li>• Promoting whole system outcomes.</li> <li>• Dealing with the wider challenges within the energy industry i.e. LCT uptake, heat, transport, and socioeconomic side of the energy system.</li> </ul>

**Table 3.1: Proposed criteria for NIF funding**

- 3.11 NIE Networks also proposes establishing an ‘Innovation Council’ as part of the governance arrangements for the NIF. This would act as an advisory body for the development of new proposals which they may bring forward during RP7.
- 3.12 The Innovation Council would consist of representatives from relevant NI-based organisations and academia. It would, on a voluntary basis, independently monitor and steer the innovation programme. NIE Networks anticipates the Innovation Council will:
- a) Review and provide feedback on NIE Networks overall innovation strategy and its subsequent updates.

- b) Monitor progress of the current innovation programme and specific initiatives.
- c) Recommend and facilitate innovative projects, initiatives, themes and collaborations that the network company should explore.
- d) Offer non-binding recommendations to the UR regarding the approval of proposals brought forward under the NIF.

3.13 In addition to the Innovation Council, NIE Networks is expecting to submit to UR and publish an annual report on its innovation programme. It will also hold an annual open call for ideas from interested stakeholders.

### **UR views on baseline proposals**

- 3.14 We considered the innovation proposals with the aid of expert consultancy input from our advisors. In terms of the ex-ante request, we are content to consider such projects. Our analysis of the individual schemes is set out in the next chapter of this annex.
- 3.15 Such an approach has strong regulatory precedent in both NI and RoI, where there is a single DNO and/or TSO. In RP6, we provided an innovation allowance based on a bottom-up analysis of different projects. Likewise for PR5, we note that CRU gave allowances for specific projects proposed by network companies that were deemed innovative.
- 3.16 The main alternative to this approach would be to set a 'general' allowance that can be used by the network company to fund innovation projects during the price control. This avoids the need to commit ex-ante to a firm list of defined projects.
- 3.17 Ofgem has historically relied on this approach in its price controls, including in RIIO-ED2. Their baseline innovation allowances are a fixed share of annual revenues rather than being linked to specific innovation projects proposed by DNOs.
- 3.18 Ofgem started by setting a top-down annual network innovation allowance (NIA) for each DNO equivalent to 0.5% of their annual base revenue. This was designed to ensure that on average the value of the NIA for RIIO-ED2 would not exceed the value for RIIO-ED1. Ofgem then adjusts the allowance based on relative quality of DNOs submissions against set criteria.<sup>6</sup>
- 3.19 Ofgem's approach reflects the context of GB. When there are multiple network companies, relying on benchmarking methods for innovation

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<sup>6</sup> Ofgem (June 2022), RIIO-ED2 Draft Determinations, Core [Methodology](#), paras 3.123-3.124. Ofgem (November 2022), RIIO-ED2 Final Determinations, Core [Methodology](#), pp. 39-44.

allowance is not only feasible but also consistent with Ofgem's general approach to cost assessment. At the same time, it also alleviates resourcing constraints that a bottom-up assessment for fourteen DNOs would create.

- 3.20 This differs to the case of NIE Networks and RP7, where there is a single network company and greater reliance on bottom-up cost assessment. NIE Networks proposal to adopt a project-by-project baseline allowance seems reasonable given the RP6 and PR5 precedent.

### **Treatment of underspend**

- 3.21 NIE Networks business plan does not discuss any sharing mechanisms for underspend against the baseline. This is discussed only for the uncertainty mechanism project spend.
- 3.22 For RP6, we proposed an asymmetrical approach whereby underspend against the ex-ante innovation allowance would be excluded from the 50:50 cost risk sharing mechanism, whilst cost over-runs would not.
- 3.23 NIE Networks was expected to allocate any underspend to additional trials, or it would otherwise have been considered as deferral for RP7 allowances. This was not enacted and the 50:50 risk sharing mechanism still applies. As a consequence, NIE Networks will keep 50% of any monies not spent by the end of RP6.
- 3.24 For RP7, we propose to rely on an approach similar to RP6 proposals. This would exclude underspend from cost sharing but not overspend. As NIE Networks is asking to have access to additional funds through the NIF, underspend could be allocated either to:
- a) Funding additional trials under the same project.
  - b) Funding additional trials under other projects included in the baseline.
  - c) Lowering the additional costs being requested through the re-opener. This would minimise in-period variations to allowed revenues.
- 3.25 This approach is similar to NIE Networks own proposal that any unused funds be recycled to deliver further innovation projects. It is also worth noting that no additional efficiency target has been imposed as a consequence of the funding, despite NIE Networks anticipating savings.

### **UR views on Network Innovation Fund**

- 3.26 We do not have concerns with NIE Networks request to access additional funds through a re-opener. Flexible mechanisms to release additional

innovation funds are a tool that regulators often use to compliment baseline allowances.

3.27 Relevant examples include:

- a) In RP6, we relied on the concept of a re-opener when deciding on the innovation allowance for NIE Networks.
- b) For PR5, the CRU introduced an innovation and R&D mechanism under its Agile Investment Framework. This can be triggered each year by ESB Networks to fund innovative projects.
- c) From RIIO-1 onwards, Ofgem has made available industry-wide funding pots in addition to company specific ex-ante allowances. During the price control, network companies can bid to access these industry-wide funds submitting the case for innovation projects.

3.28 The main rationale behind these mechanisms is to provide flexibility as an appropriate way to deal with uncertainty. Innovation needs over a price control period are not always certain at the time of business plan submission. Nor is there always perfect information on cost of the solutions identified.

3.29 Allowing access to additional funds during the price control can therefore be an effective way to enable delivery of innovative solutions as they are identified. This avoids limiting options to what was known at the start of the price control limiting the delivery of innovation throughout the price control period.

3.30 Splitting innovation allowances between re-opener and baseline can also enable the setting of efficient allowances. If network companies have the option to release additional funds during the price control, they might have a weaker incentive to inflate their baseline requests.

3.31 At the same time, regulators can more easily reduce baseline allowances compared to companies' submissions, if they can release additional funds in-period. This funding can be provided when there may be lower uncertainty or more confidence over companies' proposals.

3.32 The introduction of net zero and associated decarbonisation plans have also strengthened the need for a flexible approach. The complexity of the transformation and the need to rely on new technologies increase uncertainty over the type projects that are most suitable to enable this transformation, and their exact costs.

3.33 The introduction of a re-opener allows regulators to deal with this uncertainty. Limiting ex-ante allowances but ensuring access to additional

funds for projects that were too uncertain to be funded ex-ante provides essential flexibility.

- 3.34 The introduction of an uncertainty mechanism can have drawbacks in terms of transparency. By allowing additional funding requests in-period, the regulator will have limited visibility of the total allowance that network companies will receive during the price control and thus a limited understanding of the resources required to assess in-period submissions.
- 3.35 There is also a “gaming” risk of receiving inflated funding requests. In-period assessments are usually shorter and less involved than the ex-ante assessment leading to draft and final determinations. This is especially true when they are integrated into the annual revenue adjustment process leading to network tariff approvals.
- 3.36 Network companies could take advantage of the shorter timings available for assessment to inflate their forecasted costs more so than under an ex-ante review.
- 3.37 Whilst these concerns are relevant, they are not enough to offset the flexibility benefits that a re-opener would create. A carefully designed uncertainty mechanism can also limit these concerns. Consequently, we are content to maintain an innovation uncertainty mechanism.

#### **Presence and quantum of a cap**

- 3.38 There is regulatory precedent for having re-openers both with and without a funding cap. For example in RoI, the innovation and R&D mechanism for PR5 is uncapped. However, in GB the innovation schemes set a ceiling to the pot of money that network companies can compete for.
- 3.39 A capped re-opener could mitigate the transparency concerns that a regulator might have with the introduction of additional funds on top of the baseline. The presence of a cap would give transparency on the magnitude of the requests that will be submitted through the NIF.
- 3.40 Should a cap be approved, consumers will know that no request will be received above that maximum. We as a regulator will also have a broad understanding of how intensive in-period reviews might be.
- 3.41 The main drawback is that a cap would limit the flexibility of the re-opener mechanism, which is the main reason for introducing such a tool. In principle, a cap could risk blocking decarbonisation projects just because their costs exceed the cap and were uncertain at the time of setting the cap.
- 3.42 The presence/absence of a cap ultimately creates a set of trade-offs. It would give better transparency to the UR and lower the risk of gaming as

well as limiting the resourcing commitment. However, this is at the price of less flexibility and potentially creating a delivery risk for key projects.

- 3.43 Our understanding is that NIE Networks proposed cap of £10.3m was estimated on a residual-basis, to ensure that that the overall funding request for RP7 (baseline and re-opener) is not larger, as a percentage of the investment plan, than in RP6.
- 3.44 While this approach is defensible from a consistency perspective, it does not reflect an estimate of the costs that might be needed for additional projects (noting that some projects have already been identified). In this sense, it does not address the trade-offs discussed above.
- 3.45 To make a decision, we have considered various issues including spend in RP6 and the level of uncertainty that arises from the assessment of baseline projects and the wider investment plan.
- 3.46 We discuss the review of baseline projects in the next chapter. However, it is our view that there is reasonable confidence in the level of innovation being undertaken. As such, there is less need for flexibility and hence there is a stronger case for a capped mechanism.
- 3.47 The level of spend undertaken in RP6 to date and the proposed baseline RP7 allowances suggests that a c. £10m uncertainty cap is excessive. However, we do not want to restrict NIE Network for aiming high in delivering innovation.
- 3.48 As an alternative we are therefore indicating an innovation fund value of c.£4m for RP7. This value is based upon spend to date in RP6 and the quality and scale of the detailed project submission we have received.
- 3.49 However, no formal cap level is proposed. We will consider any well justified projects that add significant value for consumers. We are providing maximum flexibility to the NIE Networks to make innovation decisions. Along with the ex-ante baseline funding this projected £4m re-opener uplifts the innovation allowance by c. 14% from RP6 allowances.
- 3.50 Generally, the purpose of innovation is to reduce costs and/or achieve an improvement of outputs. We would normally expect that any innovation costs will be funded from the overall price control package, and not from specific innovation allowances. However we are in a time of flux and new future ways of working will be required to hit the aims of the Northern Ireland Executive's vision for the road to zero decarbonisation.
- 3.51 We are conscious that the RP7 determination must take into consideration the Northern Ireland Executive's vision for the road to zero decarbonisation by 2050 and facilitate this path to net zero as part of a fair, affordable and



inclusive transition while delivering a flexible, resilient and integrated energy system.

- 3.52 Any application to the UR should demonstrate how the project aligns with core aims detailed in the Energy Strategy - secure, affordable and clean energy for current and future generations. It should also demonstrate how the project will contribute to the achievement of net zero carbon and a reduction in fossil fuel usage. This will be essential to ensure that the investment is justified and delivers clear consumer benefits in line with government policy.

#### **Treatment of underspend**

- 3.53 We are of the view that re-opener allowances are treated in the same fashion as baseline projects. We agree with NIE Networks that dedicated annual reporting should be undertaken and published.
- 3.54 As part of this process, NIE Networks should report the gap between innovation allowances and outturn expenditure. It should further detail how any underspend has been used to reduce requests for new projects.

#### **Structure and frequency of uncertainty mechanisms**

- 3.55 NIE Networks is proposing to submit proposals for additional funds under the NIF at the end of every financial year. They also propose the flexibility to have, *“the option to submit proposals at any time if there is sufficient justification”*.
- 3.56 A process with an annual pre-determined application window is not unreasonable. It would allow UR to combine NIF funding with the wider annual revenue adjustment processes e.g. performance on incentives.
- 3.57 However, such an approach risks being resource intensive. It is also difficult to align with a framework which seeks to allocate underspend from funded projects. This difficulty arises as funds could be sought after the first year of RP7, whereas baseline projects are typically expected to be implemented over a 3-4 year period.
- 3.58 We are therefore minded having one re-opener window for innovation at the mid-point of the price control. Submissions would be expected in August 2028 alongside the RIGS reporting for the first 3 years of RP7. This request must consider delivery against funded baseline projects which should be well advanced, as well as the need for new activity. Material underspends are likely to impact future allowances.

- 3.59 NIE Networks option to submit proposals outside of the annual process could have advantages in specific circumstances, but these are unlikely to be relevant to innovation.
- 3.60 Should there be exceptional events that require urgent immediate investments (e.g. force majeure), allowing revenue variations outside of the annual process can be beneficial. This is not the case for innovation projects, that are by nature designed to address forward looking needs rather than to respond to emergencies.
- 3.61 Allowing submissions “at any time, if there is sufficient justification” would beg the question as to what would constitute justification. NIE Networks has not elaborated on this point. As such, we would not propose that submissions can be made on an ad hoc basis.

### **Project eligibility**

- 3.62 NIE Networks is proposing a set of criteria that would inform what projects could be included in the re-opener. The proposed criteria are broadly in line with those utilised in other jurisdictions for innovation funding mechanisms.
- 3.63 The stated criteria reflect a general direction of travel that is broadly consistent with energy policy in NI and with the criteria used for similar innovation mechanisms in GB and RoI. Consequently, we are content with the suggestions of NIE Networks.

### **Innovation Council**

- 3.64 By enabling NIE Networks to draw on advice on innovation projects from external stakeholders, an Innovation Council that “monitors and steers” the innovation programme could be beneficial.
- 3.65 For example, the CRU introduced a TSO Monitoring Committee<sup>7</sup> for PR5 with a similar role, although its scope is not limited to innovation projects. The role of the TSO Monitoring Committee is to assess, monitor and evaluate projects that were uncertain at the time of PR5 decision, for which the TSO might request additional funds during the price control. If the TSO has identified a project that needs to be delivered during the period for which it had no allowance, it would put the proposal through the Monitoring Committee for evaluation, advice and assessment.
- 3.66 For the Innovation Council to be effective, there needs to be clarity and alignment between the UR, NIE Networks and the members of the Innovation Council on:

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<sup>7</sup> CRU/20/154 (December 20202), PR5 Regulatory Framework, Incentives and Reporting, Section 4.5.

- a) Independence from NIE Networks, which raises questions about aspects such as responsibility for selection of members, and whether Council reports are provided directly to UR or only to NIE Networks for its consideration.
- b) Role in the funding approval process – for example, Innovation Council decisions should not in any way bind or substitute the UR’s approval process. This is acknowledged by NIE Networks.
- 3.67 These issues around remit and functioning of this body would need to be addressed in the Terms of Reference (ToR) for the Innovation Council. The ToR should cover:
- Type of assessment, activities being undertaken by the Council.
  - Number of members, selection process, and expected representation (e.g. any consumer groups).
  - Frequency of discussions.
  - Process for resolving any differences of opinions within the Council.
  - Recovery of the cost associated with the Council.
  - Reporting requirements: NIE Networks to the Council, and the Council to the UR.
- 3.68 Considering the potential practical complexities in setting up the body, we do not think the establishment of an Innovation Council is necessary at present. It is not clear why such input cannot be established from the normal means of consumer / stakeholder engagement.
- 3.69 In any case, the company plans to implement the Innovation Council require much more detail. NIE Networks is free to develop these proposals if they consider that the input is worth the resource. It should be noted that it is NIE Networks who is accountable under their licence not the Innovation council. Therefore it should be NIE Networks that puts forward any recommendations for additional funding to the UR.
- 3.70 These recommendations can be supported by NIE Networks providing evidence from consumer / stakeholder engagement that could also be supported by an Innovation Council. However, this is not required by the UR to support investment decisions.
- 3.71 This proposal should not be confused with the new role of the Evaluative Performance Panel who will be tasked with assessing NIE Networks plans and performance. NIE Networks will be able to identify innovation work within

this process, but any reward relates to performing above the outputs identified.

- 3.72 It is also worth noting that the Evaluative Performance Panel and the financial incentive associated with this has been set up to encourage NIE Networks to become 'best-in-class' and outperform when delivering against allowances. It would not be appropriate for NIE Networks to propose new innovation projects / funding requests via the forward work plan when a separate regulatory process has been established.
- 3.73 We also have no objection in NIE Networks taking the opportunity to seek match funding, which we consider helpful in bolstering support for their requests. Match funding is an excellent way of getting support from multiple organisations and we would welcome NIE Networks ambition to progress this to drive improved outcomes and lower costs for consumers in its plans throughout RP7.

### **Reporting requirements**

- 3.74 Company proposals do not contain substantive information about scope and level of granularity of the documentation they plan to submit for any NIF requests. They mention an "annual report on our innovation programme" and a "light touch regulatory process" from UR.
- 3.75 NIE Networks does not sufficiently explain how it plans to use the proposed criteria to justify its submissions. No evidence is provided as to what type of analysis, reporting tools and narrative will be included to provide the UR with a sufficient basis to make an informed decision.
- 3.76 We are content with the high-level criteria proposed. However, it is important to be clear that the presence of a re-opener request does not per se imply that new funds will be released. NIE Networks will need to demonstrate the business case for the project. A high-quality submission will then be a necessary (but not sufficient) condition for the release of new funds and the lack of quality could lead to the rejection of proposals.
- 3.77 Any application submitted should consider three core principles as below:
- Primarily, demonstrate how the project aligns with core aims detailed in the Energy Strategy - secure, affordable and clean energy for current and future generations.
  - Demonstrate how the project will contribute to the achievement of net zero carbon.
  - Illustrate how the proposal incorporates a reduction in fossil fuel usage.

- 3.78 We expect applications are concise with an emphasis on keeping the core narrative as brief as possible, present evidence and justifications for the proposed expenditure; and specify the outputs and outcomes that will be delivered as a consequence of incurring the expenditure.
- 3.79 We would expect that the following information should be provided at a minimum:
- a) Need case and urgency for the proposed project. This should clearly set out why the project cannot be funded as BAU and why it is needed in-period rather than at the next price control.
  - b) Process utilised to identify the project as the preferred innovation project, given the needs case.
  - c) A cost benefit analysis of the proposed project, using quantitative techniques where possible.
  - d) A demonstration of how the proposed projects meets the criteria approved and the objectives stated in the RP7 framework decision.
  - e) Technical features of project.
  - f) Narrative over efficiency of project costs, their breakdown and the estimation methodology. Where a data table or spreadsheet is used, the data presented should be clearly labelled and any figures quoted in the core narrative should be specifically identified with the price base being used clearly stated.
  - g) An audit trail of any underspend from the baseline innovation allowance or previously approved NIF projects used for reducing the size of this funding request.
  - h) Governance structure of the project, including stage gate processes, milestones and in what timeframe.
  - i) A clear audit trail of outturn benefits of each project approved in the past, so that they can be compared with the estimates put forward in previous years.
  - j) Carbon emissions savings assumptions must be clearly identified.
- 3.80 Given that these requests are limited to a mid-control window, it is our expectation that the submission will be of high quality. We would also expect to undertake a detailed review before any release of funds.
- 3.81 We would further encourage NIE Networks to add value to their project in terms of match funding or multiple funding entities where possible. The

submission should therefore also include clear descriptions of the steps NIE Networks has taken to source any other alternative funding sources and provide evidence that alternative funding is not available or appropriate for the project.

3.82 As well as the uncertainty mechanism requirement, we also agree with NIE Networks that annual reporting on project delivery should be established. We also welcome the plan to publish such reports.

3.83 As part of this reporting we would expect annual updates on the following:

- Individual projects spend.
- Amendments to delivery timelines / milestones.
- Risks mitigated and realised.
- Outputs and lessons learned (on completion of trials).
- Expected benefits etc.

3.84 This reporting is expected to address the current shortcomings in the RP6 innovation programme and aid future decision making. This would enable NIE Networks the opportunity of linking innovative projects alongside planned and programmed works to maximise benefit.

3.85 A post project evaluation (PPE) should be carried out once the project has been completed by NIE Networks and submitted to UR in the form of a close-down report.

3.86 We may engage with NIE Networks to seek clarification on any aspect of its PPE report particularly if there is under or non-delivery of outputs and will have to consider if further action is required. This can be included within the annual reporting.

3.87 As consumers are taking the risk to fund projects on an ex-ante basis, we agree with NIE Networks that annual updates should be published. It is our expectation that NIE Networks lead in terms of this activity. We would also expect PPEs to be published by the company to facilitate shared learnings across all DNOs.

## 4. RP7 Baseline Analysis

### Project review

4.1 NIE Networks has requested £8.8m in baseline innovation schemes. The request can be summarised in Table 4.1 as follows:

Innovation Project	NIEN Request
Data Analytics	£0.65m
Real-Time Fault Level Monitoring (RTFLM)	£1.03m
HV Active Network Management (HV ANM)	£0.69m
Vehicle to X	£1.26m
DC Readiness	£0.50m
Flexibility Market Development	£0.88m
Virtual STATCOM	£0.47m
Micro-Resilience	£0.74m
Supporting Vulnerable Customers in a Digital Net Zero Era	£0.36m
Customer Load Active System Services (CLASS)	£1.43m
Real-Time Thermal Rating at 110kV	£0.78m
Totals	£8.79m

**Table 4.1: RP7 innovation request in 2021-22 prices**

4.2 We have considered their submissions regarding the innovation programme on a bottom-up basis.

4.3 When determining an allowance, the principal issues considered were need, costs, potential benefits, innovative nature and risks. Each project has been categorised as follows:

- Category 1 – Both need and cost are well supported and justified. These projects attract full or majority allowance.
- Category 2 – Need is established but costs are not supported. These projects can be subject to partial allowance if we have a clear view on the reasonable level of spend.
- Category 3 - Need is established but costs are very uncertain. These projects can be considered for a re-opener where no ex-ante allowance is given but costs can be requested during the RP7 period when the scale of spend is better understood.

- Category 4 – Both need and costs are unjustified. These projects are subject to full disallowance.

4.4 In order to reach a draft determination, we have considered the project business cases alongside the benchmarking examples listed.

4.5 We have detailed each project, cost, objectives, project categorisation and recommendation in the tables that follow. Where full allowance has not been provided, we have set out the rationale and information/justification which is considered missing.

4.6 For each project NIE Networks has requested internal project management (PM) and engineering support. They have also listed external consultancy support. Internal resources have been forecast at a cost of £442/day with external support costing [X X X].

4.7 Whilst the external unit rates are considered reasonable, it is our view that the internal staff costs are on the high side. The daily rate requested is cost close to £97k per annum based on 220 working days per year.

4.8 For each project we have reduced the internal rate to £400/day. This is equivalent to £88k per annum and is in line with NIE Networks own PM and engineering costs for previous pre-construction projects.<sup>8</sup>

Project Name	Data Analytics
<b>Amount Requested in RP7</b>	<b>£0.65m</b>
<p><b>Project Synopsis</b></p> <ul style="list-style-type: none"> <li>• This project will evaluate NIE Networks’ existing data landscape compared with other network operators.</li> <li>• It will enable identification of opportunities to derive additional value for NIE Networks and its customers.</li> <li>• The key objectives of the Data Analytics project are to: <ul style="list-style-type: none"> <li>a) Study and analyse how data from network equipment and other data sets such as customer and network performance records could be used for the potential benefit of the network.</li> <li>b) Review the latest techniques and innovation projects in the data analytics space in other jurisdictions and prioritise use cases.</li> <li>c) Outline the scope for three data analytics initiatives that could be taken forward to promote greater investment efficiency, reliability and resilience within the network.</li> <li>d) Test and trial techniques to verify the use cases’ suitability for NIE Networks.</li> </ul> </li> </ul>	

<sup>8</sup> For the Airport Road project NIE Networks listed PM and engineering costs at £46/hour = £368/day (2019-20 prices). When uplifted to 2021-22 prices, this is equivalent to c. £400/day.



## Objectives and Timings

- A successful project will deliver three advanced data analytics techniques that are expected to provide a combination of benefits.
- This might include low carbon technology (LCT) detection, identifying vulnerable customers or predicting demand/generation.
- The TRL<sup>9</sup> for each data analytics project will depend on the use case and techniques selected.
- The timelines for the project are as follows:

	Year 1				Year 2				Year 3			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
<b>WP1: Review of Previous Projects and Learning</b>												
1.1 Review of previous projects and learning	■	■										
<b>WP2: Review of NIE Networks' Needs Cases and Data Landscape</b>												
2.1 Review of NIE Networks' needs cases and data landscape		■	■									
<b>WP3: Algorithm Selection</b>												
3.1 Assessment criteria development				■								
3.2 Algorithm selection					■							
3.3 Trial design					■							
<b>WP4: Algorithm Adaption, Testing and Validation, Analysis and Reporting</b>												
4.1 Algorithm 1 adaption, testing and validation						■	■	■	■			
4.2 Algorithm 2 adaption, testing and validation						■	■	■	■			
4.3 Algorithm 3 adaption, testing and validation						■	■	■	■			
4.4 Analysis and reporting							■	■	■	■		
<b>WP5: BaU Planning and Implementation</b>												
5.1 BaU Planning and Implementation										■	■	

## Issues / Summary

- Maximising the use of data for decision making is a reasonable proposition.
- It is however somewhat questionable if this project should be categorised as an innovation scheme.
- For instance, it is very similar to the proposal listed under DSO13 which aims to, *“procure a system that will collate network data from multiple BAU systems to analyse and provide recommendations to assist in network planning and strategy decisions.”*
- It is not clear how this project differs from the DSO13 scheme.
- It would not seem appropriate to undertake two projects which appear to overlap so significantly.
- The need for this project is therefore in question.

<b>Classification</b>	<b>Category 3</b>
<b>Recommendation</b>	<b>No allowance</b>

## DD Actions

- In order to consider an allowance, NIE Networks would need to demonstrate the difference between this project and the other IT projects which maximise data analytics.

**Table 4.2: Review of Data Analytics request**

<sup>9</sup> Technology readiness levels (TRLs) are a method for estimating the maturity of technologies. TRLs enable consistent comparisons of maturity across different types of technology. TRLs are based on a scale from 1 to 9 with 9 being the most mature technology.

Project Name	Real-Time Fault Level Monitoring																																																																																																																																																																																																																																																																																																															
Amount Requested in RP7	£1.03m																																																																																																																																																																																																																																																																																																															
<p><b>Project Synopsis</b></p> <ul style="list-style-type: none"> <li>NIE Networks proposes to trial the use of RTFLM solutions on its network which predict fault currents by monitoring network disturbances.</li> <li>This technology could replace periodic network studies and potentially defer costly reinforcement with accurate active fault management.</li> <li>The key objectives of the project are to: <ul style="list-style-type: none"> <li>a) Procure and deploy fault level monitoring (FLM) equipment at a specified location(s) on the network.</li> <li>b) Investigate the impact, if any, of RTFLM equipment on the network.</li> <li>c) Monitor the fault levels at the measuring point(s) over a trial period and use data to analyse the headroom capacity.</li> <li>d) Develop a transition plan and implement RTFLM into BAU.</li> </ul> </li> </ul>																																																																																																																																																																																																																																																																																																																
<p><b>Objectives and Timings</b></p> <ul style="list-style-type: none"> <li>A successful project will produce real-time visibility of fault levels.</li> <li>The pre-trial TRL is 5/6 moving to 7/8 post trial.</li> <li>The timelines for the project are as follows:</li> </ul> <table border="1"> <thead> <tr> <th rowspan="2"></th> <th colspan="4">Year 1</th> <th colspan="4">Year 2</th> <th colspan="4">Year 3</th> <th colspan="4">Year 4</th> </tr> <tr> <th>Q1</th> <th>Q2</th> <th>Q3</th> <th>Q4</th> <th>Q1</th> <th>Q2</th> <th>Q3</th> <th>Q4</th> <th>Q1</th> <th>Q2</th> <th>Q3</th> <th>Q4</th> <th>Q1</th> <th>Q2</th> <th>Q3</th> <th>Q4</th> </tr> </thead> <tbody> <tr> <td>WP1: Review of Previous Projects and Learning</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>1.1 Review of Previous projects and learning</td> <td>█</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>WP2: Trial Design, Site Selection and Network Modelling</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>2.1 High level analysis of networks and site selection</td> <td></td><td>█</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>2.2 Detailed power system studies</td> <td></td><td></td><td>█</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>2.3 System architecture and trial design</td> <td></td><td></td><td></td><td>█</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>WP3: System Specification and Procurement</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>3.1 System specification and procurement</td> <td></td><td></td><td></td><td></td><td>█</td><td>█</td><td>█</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>WP4: Installation and Commissioning</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>4.1 Installation and commissioning</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>█</td><td>█</td><td>█</td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>WP5: Trials, Analysis and Reporting</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>5.1 Trial execution</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>█</td><td>█</td><td>█</td><td>█</td><td></td><td></td><td></td> </tr> <tr> <td>5.2 Analysis and reporting</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>█</td><td>█</td><td>█</td><td>█</td><td></td><td></td> </tr> <tr> <td>WP6: BaU Planning and Implementation</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>6.1 BaU planning and implementation</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>█</td><td>█</td> </tr> </tbody> </table>																		Year 1				Year 2				Year 3				Year 4				Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	WP1: Review of Previous Projects and Learning																	1.1 Review of Previous projects and learning	█																WP2: Trial Design, Site Selection and Network Modelling																	2.1 High level analysis of networks and site selection		█															2.2 Detailed power system studies			█														2.3 System architecture and trial design				█													WP3: System Specification and Procurement																	3.1 System specification and procurement					█	█	█										WP4: Installation and Commissioning																	4.1 Installation and commissioning								█	█	█							WP5: Trials, Analysis and Reporting																	5.1 Trial execution										█	█	█	█				5.2 Analysis and reporting											█	█	█	█			WP6: BaU Planning and Implementation																	6.1 BaU planning and implementation															█	█
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<p><b>Issues / Summary</b></p> <ul style="list-style-type: none"> <li>The use of this technology is well advanced in other network operators.</li> <li>There seems potential for considerable savings and network operational benefits. Project need is therefore accepted.</li> <li>It is not considered that the stage one work package (review of previous learnings) is required as this seems to have been largely complete.</li> <li>Besides internal FTE unit cost reduction, all other activity has been funded.</li> </ul>																																																																																																																																																																																																																																																																																																																
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<p><b>DD Actions</b></p> <ul style="list-style-type: none"> <li>No actions required.</li> </ul>																																																																																																																																																																																																																																																																																																																

**Table 4.3: Review of RTFLM request**

<b>Project Name</b>	<b>High Voltage Active Network Management (HV ANM)</b>
<b>Amount Requested in RP7</b>	<b>£0.69m</b>

**Project Synopsis**

- Network issues may occur when the distribution of supply and demand results in power flows that exceed circuit ratings or cause voltage issues.
- However, it is possible to address network capacity issues by re-routing load and generation through sections of network with spare capacity.
- This can be achieved via *automated load transfer (ALT)* or *Meshed Networks* solutions.
- The key objectives of the project are to consider the merits of both network options by:
  - a) Conducting power system studies to identify up to 10 trial sites for ALT and Meshed Networks.
  - b) Using the power system studies alongside other forecasts to develop an ALT and Meshed Networks decision-making process.
  - c) Implementing a trial of the ALT method at the locations identified.
  - d) Update the network with additional switching/protection equipment (particularly for Meshed Networks).
  - e) Implement a trial of the dynamic Meshed Networks configuration at the locations identified.
  - f) Providing a summary of the results from both trials.

**Objectives and Timings**

- A successful project will deliver trial learnings, and if successful, an implementation strategy for automated switching to address constraints.
- The pre-trial TRL is 7 moving to 8/9 post trial.
- The timeline for the project is around 3.5 years as follows:

	Year 1				Year 2				Year 3				Year 4			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
<b>WP1: Review of Previous Projects and Learning</b>																
1.1 Review of Previous Projects and Learning	█															
<b>WP2: Trial Design, Site Selection and Network Modelling</b>																
2.1 High level analysis of networks and site selection		█	█													
2.2 Detailed power system studies			█	█												
2.3 System architecture and trial design				█	█											
<b>WP3: System Specifications and Procurement</b>																
3.1 Equipment specification and procurement					█	█	█									
<b>WP4: Installation and Commissioning</b>																
4.1 Installation and commissioning								█	█	█						
<b>WP5: Live Trials, Analysis and Reporting</b>																
5.1 Trial execution										█	█	█	█			
5.2 Analysis and reporting											█	█	█	█		
<b>WP6: BaU Planning and Implementation</b>																
6.1 BaU planning and implementation														█	█	

**Issues / Summary**

- This project has considerable potential benefits and is mirroring other Network operators' activity in this area.
- NIE Networks is also conducting a study in RP6 on low voltage ANM, so this project development seems logical.
- Our principle concern is the statement that Meshed Networks could expose more customers to supply interruptions.
- We have however supported the cost request for additional protection equipment to mitigate this risk.
- Besides the FTE unit cost reduction, full allowance for this project has been provided.

<b>Classification</b>	Category 1
<b>Recommendation</b>	<b>£0.66m</b>
<b>DD Actions</b>	
<ul style="list-style-type: none"> <li>• No actions required.</li> </ul>	

**Table 4.4: Review of HV ANM request**

<b>Project Name</b>	<b>Vehicle to X (V2X)</b>
<b>Amount Requested in RP7</b>	<b>£1.26m</b>
<b>Project Synopsis</b>	
<ul style="list-style-type: none"> <li>• The V2X (vehicle to everything) project aims to develop an understanding of how bi-directional chargers in electric vehicles (EVs) will impact the distribution system.</li> <li>• The project aims to carry out trials to demonstrate that EVs can act as a battery energy storage system (BESS) and be a solution to constraints.</li> <li>• The key objectives of the project are to: <ul style="list-style-type: none"> <li>a) Ensure connection policies are fit for purpose.</li> <li>b) Gain deeper understanding of customer behaviour.</li> <li>c) Investigate data sharing requirements between NIE Networks and key stakeholders.</li> <li>d) Analyse how bi-directional energy flows, through utilisation of EV battery storage capability, will impact network power flows.</li> <li>e) Refine the technical and commercial requirements for the provision of V2X flexibility services.</li> </ul> </li> </ul>	
<b>Objectives and Timings</b>	
<ul style="list-style-type: none"> <li>• A successful project will identify barriers and determine typical V2X user profiles that can be used to model network impact.</li> <li>• The pre-trial TRL is 5/6 moving to 7/8 post trial.</li> <li>• The timeline for the project is 4 years split as follows:</li> </ul>	

	Year 1				Year 2				Year 3				Year 4			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
<b>WP1: Review of Previous Projects and Learning</b>																
1.1 Review of previous projects and learning																
<b>WP2: Assessment of NI V2G Barriers</b>																
2.1 Assessment of regulatory/connections framework																
2.2 Northern Ireland V2G market evaluation																
2.3 Identification of barriers to adoption																
<b>WP3: Trial Design</b>																
3.1 System architecture and trial design																
<b>WP4: System Specification and Procurement</b>																
4.1 Market assessment																
4.1 System specification and procurement																
<b>WP5: Participant Recruitment</b>																
5.1 Public engagement																
5.2 Participant recruitment																
<b>WP6: Installation and Commissioning</b>																
6.1 Installation and commissioning																
6.2 Participant onboarding																
<b>WP7: Live Trials, Analysis and Reporting</b>																
7.1 Trial execution																
7.2 Analysis and reporting																
<b>WP8: BaU Planning and Implementation</b>																
8.1 BaU planning and implementation																
8.2 Regulatory reporting and public consultation																

**Issues / Summary**

- Some material concerns exist with this project.
- For instance, the supporting business case recognises the difficulties encountered by other GB Network operators i.e.
  - a) Difficulties in signing up participants.
  - b) Inability to access sufficient data.
  - c) Complexity with installing hardware.
  - d) Constant communication with technology partnerships.
- NIE Networks are proposing a trial with a minimum of 10 customers. This does not seem like enough observations to derive reliable conclusions on typical customer usage.
- Project will require customer training to use the EV and V2X technology.
- The Dingle electrification project<sup>10</sup> run by ESB Networks encountered a variety of issues including: i) communication outages; ii) Wi-Fi issues; iii) customer disconnections; iv) synchronised discharging causing potential voltage challenges; v) limited response available during the day when vehicles are not connected to the chargers.
- NIE networks has not addressed how these problems might be overcome.
- Given the limited nature of the trial and the risk, the value of the spend is highly questionable. We are therefore minded not to support this project.

<b>Classification</b>	<b>Category 3</b>
<b>Recommendation</b>	<b>No allowance</b>

**DD Actions**

- In order to consider an allowance, NIE Networks would need to demonstrate how the recognised issues might be overcome.
- They should also explain how it expects to obtain actionable data from such a limited set of participants.

**Table 4.5: Review of V2X request**

<sup>10</sup> See The Dingle Electrification Project: Customer Flexibility Trial [paper](#).

Project Name	DC Readiness																																																																																																		
<b>Amount Requested in RP7</b>	<b>£0.50m</b>																																																																																																		
<b>Project Synopsis</b> <ul style="list-style-type: none"> <li>Use of direct current (DC) networks has significant potential to enable the deployment of low carbon technology (LCTs).</li> <li>There are no examples of BAU implementation of LVDC for utilities and only trials have been developed.</li> <li>However, DC systems have potential to control real and reactive power independently enabling voltage control and better fault management.</li> <li>The key objectives of the project are to: <ul style="list-style-type: none"> <li>a) Research and document the technical and regulatory issues related to design and operation of new LVDC networks.</li> <li>b) Document the feasibility of leveraging existing alternating current (AC) assets and the integration of LVDC networks into existing power systems.</li> <li>c) Understand the performance and commercial viability of LVDC assets and networks.</li> </ul> </li> </ul>																																																																																																			
<b>Objectives and Timings</b> <ul style="list-style-type: none"> <li>A successful project will deliver a feasibility study with findings that can be taken forward into live trial phase.</li> <li>The pre-trial TRL is 1 moving to 4 post trial.</li> <li>The project is expected to take 2 years to complete.</li> </ul> <table border="1"> <thead> <tr> <th rowspan="2"></th> <th colspan="4">Year 1</th> <th colspan="4">Year 2</th> </tr> <tr> <th>Q1</th> <th>Q2</th> <th>Q3</th> <th>Q4</th> <th>Q1</th> <th>Q2</th> <th>Q3</th> <th>Q4</th> </tr> </thead> <tbody> <tr> <td>WP1: Review of Previous Projects and Learning</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>1.1 Review of previous projects and learning</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>WP2: Feasibility Studies</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>2.1 LVDC Studies: use case identification</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>2.2 Use case 1: Development, technical assessment and CBA</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>2.3 Use case 2: Development, technical assessment and CBA</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>2.4 Use case 3: Development, technical assessment and CBA</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>WP3: Findings, dissemination and reporting</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>3.1 Findings, dissemination and reporting</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </tbody> </table>			Year 1				Year 2				Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	WP1: Review of Previous Projects and Learning									1.1 Review of previous projects and learning									WP2: Feasibility Studies									2.1 LVDC Studies: use case identification									2.2 Use case 1: Development, technical assessment and CBA									2.3 Use case 2: Development, technical assessment and CBA									2.4 Use case 3: Development, technical assessment and CBA									WP3: Findings, dissemination and reporting									3.1 Findings, dissemination and reporting								
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<b>Issues / Summary</b> <ul style="list-style-type: none"> <li>This project is in the early stages and involves desktop-based feasibility studies to develop this innovative technology.</li> <li>The potential benefits are worth investigating.</li> <li>Labour costs of £0.5m however seem excessive for three feasibility studies.</li> <li>We are minded to support the project but with 20% less staff resource.</li> </ul>																																																																																																			
<b>Classification</b>	<b>Category 2</b>																																																																																																		
<b>Recommendation</b>	<b>£0.39m</b>																																																																																																		
<b>DD Actions</b> <ul style="list-style-type: none"> <li>For full allowance NIE Networks would need to explain the resourcing.</li> </ul>																																																																																																			

**Table 4.6: Review of DC Readiness request**

<b>Project Name</b>	<b>Flexibility Market Development</b>
<b>Amount Requested in RP7</b>	<b>£0.88m</b>

**Project Synopsis**

- During the RP6 FLEX project, NIE Networks procured flexibility services from customers approximately 6-months to 1-year ahead of delivery.
- NIE Networks has successfully procured both pre-fault and post-fault congestion management products.
- This project aims to build on the initial work but have more real-time procurement (weeks, days or even hours ahead of need) to create more competitive flexibility markets.
- The key objectives of the project are to:
  - a) Develop a detailed end-to-end market design, documenting functional and operational requirements.
  - b) Investigate the functionality of existing commercial third-party platforms and determine if there is an off-the-shelf solution.
  - c) Establish a market platform and successfully complete user acceptance testing.
  - d) Implement the closer to real-time flexibility market, procuring and utilising flexibility while ensuring settlement procedures are in place.
  - e) Trial a variety of procurement and trading strategies in order to understand market behaviour.

**Objectives and Timings**

- A successful project will implement a real-time flexibility market and evaluate the benefits of this activity.
- The pre-trial TRL is 5 moving to 7/8 post trial.
- The project is expected to take 4 years to complete.

	Year 1				Year 2				Year 3				Year 4			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
<b>WP1: Review of Previous Projects and Learning</b>																
1.1 Review of previous projects and learning																
<b>WP2: Market and Trial Design</b>																
2.1 Market platform research																
2.2 Review and update current arrangements, barriers to implementation																
2.3 High level network analysis and site selection																
2.4 System architecture and trial design																
<b>WP3 System Specification and Procurement</b>																
3.1 System specification and procurement																
<b>WP4: Participant Recruitment</b>																
4.1 Publication of opportunities																
4.2 Participant recruitment																
<b>WP5: Implementation and Commissioning</b>																
5.1 Technical integration with flexible market platform																
5.2 Participant onboarding																
<b>WP6: Live Trials, Analysis and Reporting</b>																
6.1 Trial execution: trading on the flexibility market platform																
6.2 Analysis and reporting																
<b>WP7: BaU Planning and Implementation</b>																
7.1 BaU Planning and implementation																
7.2 Regulatory reporting and public consultations																

<b>Issues / Summary</b>	
<ul style="list-style-type: none"> <li>• This project has a strong needs case and various potential benefits.</li> <li>• The project is also supported by RP6 findings and other benchmarked projects.</li> <li>• We do not consider that work package one is required given the considerable learnings from the FLEX project.</li> <li>• Otherwise, we are content to support this innovative project.</li> <li>• The only concern is the potential overlap with <i>DSO16 - Flexibility Services Enduring Solution</i>, which aims to implement an enduring system and interface to enable NIE Networks to utilise flexibility services.</li> <li>• Whilst we are content to provide support to this innovative project, we would welcome clarification on this issue.</li> </ul>	
<b>Classification</b>	<b>Category 2</b>
<b>Recommendation</b>	<b>£0.82m</b>
<b>DD Actions</b>	
<ul style="list-style-type: none"> <li>• NIE Networks should demonstrate the difference between this project and the DSO16 activity.</li> </ul>	

**Table 4.7: Review of Flexible Market Development request**

<b>Project Name</b>	<b>Virtual STATCOM</b>
<b>Amount Requested in RP7</b>	<b>£0.47m</b>
<b>Project Synopsis</b>	
<ul style="list-style-type: none"> <li>• The issue of managing system voltages has typically been addressed through passive network reinforcement and voltage correcting solutions.</li> <li>• Physical STATCOMs offer distribution system operators solutions to manage voltage issues but can be costly.</li> <li>• The focus of this project is to investigate the concept of dynamic control of reactive power at distributed generation (DG).</li> <li>• The key objectives of the project are to: <ul style="list-style-type: none"> <li>a) Develop and implement algorithms in a suitable (possibly existing) power system analysis software package.</li> <li>b) Optimise algorithms to dynamically manage the control modes and setpoints of existing generation on the network.</li> <li>c) Rollout algorithms and techniques network wide as part of a BAU transition.</li> </ul> </li> </ul>	
<b>Objectives and Timings</b>	
<ul style="list-style-type: none"> <li>• A successful project will demonstrate the mitigation of network constraints, network loss reduction and improved customer power quality.</li> <li>• This is the expected benefit of operating DG at different power factors.</li> <li>• The pre-trial TRL is 6 moving to 8 post trial.</li> <li>• The timeline for the project is expected to be 3 years split as follows:</li> </ul>	



	Year 1				Year 2				Year 3			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
<b>WP1: Review of Previous Projects and Learning</b>												
1.1 Review of previous projects and learning												
<b>WP2: Trial Design, Site Selection and Network Modelling</b>												
2.1 High level analysis of networks and site selection												
2.2 Detailed power system studies												
2.3 System architecture and trial design												
<b>WP3: System Specification</b>												
3.1 Technical and functional specification development												
<b>WP4: Algorithm Development and Testing</b>												
4.1 Development of optimisation and evaluation algorithms												
4.2 Testing of evaluation algorithm on selected part of the												
4.3 Testing of optimisation algorithm on selected part of the												
<b>WP5 Implementation and Commissioning</b>												
5.1 System implementation and testing												
<b>WP6: Live Trials, Analysis and Reporting</b>												
6.1 Trial execution												
6.2 Analysis and reporting												
<b>WP7: BaU Planning and Implementation</b>												
7.1 BaU Planning and implementation												

### Issues / Summary

- This project is well justified and supported by other network operators' innovation benchmarking.
- No material concerns exist and there are potential network benefits.
- Beside internal unit cost reductions, this project has been subject to full allowance.

<b>Classification</b>	<b>Category 1</b>
<b>Recommendation</b>	<b>£0.45m</b>
<b>DD Actions</b>	
<ul style="list-style-type: none"> <li>• No action required.</li> </ul>	

**Table 4.8: Review of Virtual STATCOM request**

<b>Project Name</b>	<b>Micro-Resilience</b>
<b>Amount Requested in RP7</b>	<b>£0.74m</b>
<b>Project Synopsis</b>	
<ul style="list-style-type: none"> <li>• Battery Energy Storage Systems (BESS) can store energy from the grid or local electricity generation for use when the grid connection is lost.</li> <li>• A BESS system can help to maintain a secure supply in remote areas. It can also provide a cost-effective solution and potentially defer large-scale reinforcement.</li> <li>• Solutions have been integrated in networks in Great Britain (GB) and RoI but has not yet been examined and trialled in NI.</li> <li>• The key objectives of the project are to: <ul style="list-style-type: none"> <li>a) Investigate the technical feasibility of safely deploying BESS to support islanded operation.</li> <li>b) Trial the proposed technical solutions with a view to implementation on a wider scale.</li> </ul> </li> </ul>	

- c) Measure the ability of a Micro-Resilience solution to defer conventional network reinforcement and minimise customer bills.

### Objectives and Timings

- A successful project will demonstrate the feasibility of the safe operation and the costs/benefits of deploying BESS on other parts of the network.
- The pre-trial TRL is 5/6 moving to 7/8 post trial.
- The project is expected to take 3.75 years to complete as follows:

	Year 1				Year 2				Year 3				Year 4			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
<b>WP1: Review of Previous Projects and Learning</b>																
1.1 Review of Previous Projects and Learning																
<b>WP2: Trial Design, Site Selection and Network Modelling</b>																
2.1: High level network analysis and site selection																
2.2: Detailed power system modelling and BESS design																
2.3: System architecture and trial design																
<b>WP3: System Specification and Procurement</b>																
3.1 System specification and procurement																
<b>WP4: Installation and Commissioning</b>																
4.1 Installation and commissioning																
<b>WP5: Live Trials, Analysis and Reporting</b>																
5.1 Trial execution																
5.2 Analysis and reporting																
<b>WP6: BaU Planning and Implementation</b>																
6.1 BaU planning and implementation																

### Issues / Summary

- This project has a well-supported business case and a good rationale.
- Potential benefits include security of supply, minimising customer minutes lost (CMLs) and aiding worst served customers.
- It is also welcome that the technology has been employed elsewhere and can be deployed on a mobile basis as required.
- We are content to support this project as an innovation trial.
- However, the key concern is from a legal perspective. Unlike other GB Network operators, NIE Networks is also a [certified](#) TSO.
- As such, the company cannot have any generation or supply interests. In the absence of legislation, batteries are being licensed as generators.
- It is noticeable from the submission that as well as a back-up supply, BESS may be able to provide other services when connected to the grid.
- As these can be provided by the market, it is not clear if NIE Networks should be undertaking this activity.
- We would welcome further engagement on this issue.

<b>Classification</b>	<b>Category 1</b>
<b>Recommendation</b>	<b>£0.72m</b>

### DD Actions

- For the purposes of a final decision, we would welcome engagement from NIE Networks regarding the legal issue associated with the DNO also being a certified TSO.

**Table 4.9: Review of Micro-Resilience request**

Project Name	Supporting Vulnerable Customers
Amount Requested in RP7	£0.36m

### Project Synopsis

- Various factors affect vulnerability including finances, medical issues or support services.
- Lack of digital awareness can create new vulnerabilities.
- The key objectives of this project is to:
  - a) Review and evaluate NIE Networks current vulnerable customers definition(s) and support strategies.
  - b) Examine the key changes that have already occurred and those that are expected to emerge during the net zero transition.
  - c) Identify how groups of customers may experience difficulties in accessing services or unlocking benefits through this transition.
  - d) Assess the barriers to groups of customers adapting to these changes or overcoming difficulties.
  - e) Design and evaluate strategies and actions to support customers with overcoming identified barriers.
  - f) Update NIE Networks definition of vulnerable customers.

### Objectives and Timings

- A successful project will deliver an updated strategy and action plan for improvements of services to vulnerable customers.
- The TRL is not relevant for this project.
- The timeline for the project is 2.75 years split as follows:

	Year 1				Year 2				Year 3			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
<b>WP1: Review of Previous Projects and Learning</b>												
1.1 Review of previous projects and learning	■											
<b>WP2: Evaluation of NIE Networks' current position</b>												
2.1 Assessment of NIE Networks' current approach/strategy		■	■									
2.2 Assessment of challenges of net zero and digitalisation			■	■								
<b>WP3: Development of inclusive strategy</b>												
3.1 Strategy development			■	■								
<b>WP4: Customer Engagement Survey</b>												
4.1 Customer engagement survey design				■								
4.2 Customer engagement survey					■	■	■					
4.3 Analysis and reporting						■	■	■				
<b>WP5: Strategy Implementation</b>												
5.1 Strategy refinement								■	■			
5.2 Startegy implementation									■	■	■	
5.3 Analysis and reporting										■	■	■

### Issues / Summary

- This business case does not support the requirement for an innovation allowance.
- The actions listed are all those that would be expected of a reasonable and prudent network operator and BAU activity.
- We do not consider additional innovation allowance for this project is justified. Such activity should be undertaken as a matter of course.

<b>Classification</b>	<b>Category 4</b>
<b>Recommendation</b>	<b>No allowance</b>
<b>DD Actions</b>	
<ul style="list-style-type: none"> <li>In order to consider any allowance, NIE Networks would need to demonstrate why the objectives are innovative in nature.</li> </ul>	

**Table 4.10: Review of Supporting Vulnerable Customer request**

Project Name	Customer Load Active System Services (CLASS)																																																																																																																																																																																																																																																																																																																																																																				
<b>Amount Requested in RP7</b>	<b>£1.43m</b>																																																																																																																																																																																																																																																																																																																																																																				
<p><b>Project Synopsis</b></p> <ul style="list-style-type: none"> <li>By optimising network voltages during peak demand, demand can be reduced on a temporary basis without materially impacting customers, otherwise known as conservative voltage reduction (CVR).</li> <li>ENWL<sup>11</sup> leveraged this relationship to provide ancillary services (operational reserves and response products) to the Electricity System Operator (ESO).</li> <li>NIE Networks wish to investigate the possibility of providing such ancillary services to SONI.</li> <li>The key objectives of the project are to: <ul style="list-style-type: none"> <li>a) Technically implement CLASS in a section of the network and integrate it into NIE Networks systems.</li> <li>b) Demonstrate the successful provision of ancillary services to the TSO and the impact on customers.</li> <li>c) Investigate ancillary service opportunities that CLASS offers, as well as customer energy savings and the impact on customer bills.</li> <li>d) Integrate CLASS into the TSO's systems and market interfaces.</li> </ul> </li> </ul>																																																																																																																																																																																																																																																																																																																																																																					
<p><b>Objectives and Timings</b></p> <ul style="list-style-type: none"> <li>A successful project will investigate and complete trials of the CLASS system, including the economic benefits.</li> <li>The project is expected to take 4 years to complete as follows:</li> </ul>																																																																																																																																																																																																																																																																																																																																																																					
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Trials, Analysis and Reporting</b></td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>5.1 Trial execution : NIEN compatibility, SONI compatibility, DS3 market engagement</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>5.2 Analysis, data sharing and reporting</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td><b>WP6: BaU Planning and Implementation</b></td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>6.1 Business case development and market impact assessment</td> 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<sup>11</sup> ENWL = Electricity North West.

<b>Issues / Summary</b>	
<ul style="list-style-type: none"> <li>• The benefits of reductions to customer bills by the network operators providing ancillary services is worth investigating.</li> <li>• However, as the business case recognises, there are significant technical and regulatory challenges to the project.</li> <li>• The regulatory barriers need to be investigated and determined before this project should commence.</li> <li>• It is recognised that if derogations are not provided the project cannot proceed. It is therefore our view that these issues need to be addressed before any allowance can be considered.</li> <li>• Consequently, no allowance has been provided for the draft determination.</li> </ul>	
<b>Classification</b>	<b>Category 3</b>
<b>Recommendation</b>	<b>No allowance</b>
<b>DD Actions</b>	
<ul style="list-style-type: none"> <li>• In order to consider an allowance, NIE Networks would need to engage on the regulatory barriers and make a case why derogations should apply.</li> </ul>	

**Table 4.11: Review of CLASS request**

<b>Project Name</b>	<b>Real-Time Thermal Rating at 110kV</b>
<b>Amount Requested in RP7</b>	<b>£0.78m</b>
<b>Project Synopsis</b>	
<ul style="list-style-type: none"> <li>• This project follows on from the Smart Asset Monitoring (SAM) project in RP6.</li> <li>• It is designed to assess the real-time thermal rating (RTTR) of conductors to unlock capacity which would otherwise not be available from static ratings.</li> <li>• This requires line monitors, weather stations, communications, data logging capabilities and forecasting algorithms.</li> <li>• The key objectives of the project are to: <ul style="list-style-type: none"> <li>a) Implement enhanced monitoring equipment linked to the ANM system.</li> <li>b) Investigate the validity of forecasting technology and develop algorithms to utilise RTTR more efficiently.</li> <li>c) Apply weather based real-time ratings from a planning and operational perspective.</li> <li>d) Develop closed loop functionality and communication as required between NIE Networks, SONI and the ANM system.</li> </ul> </li> </ul>	
<b>Objectives and Timings</b>	
<ul style="list-style-type: none"> <li>• A successful project will provide near-time forecasts of line ratings and validate their accuracy and reliability.</li> <li>• The pre-trial TRL is 7/8 moving to 8/9 post trial.</li> <li>• The timelines for the project are as follows:</li> </ul>	

	Year 1				Year 2				Year 3				Year 4			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
<b>WP1: Review of Previous Projects and Learning</b>																
1.1 Review of Previous Projects and Learning																
<b>WP2: Trial Design, Site Selection and Network Modelling</b>																
2.1 Engagement with TSO																
2.2 Network analysis and site selection																
2.3 System architecture and trial design																
<b>WP3: System Specification and Procurement</b>																
3.1 System specification and procurement																
<b>WP4: Installation and Commissioning</b>																
4.1 Installation and commissioning																
<b>WP5: Live Trials and Algorithm Development, Analysis and Reporting</b>																
5.1 Trial execution																
5.2 Forecasting algorithm development																
5.3 Analysis and reporting																
<b>WP6: BaU Planning and Implementation</b>																
6.1 BaU Planning and implementation																

**Issues / Summary**

- The project is well justified and a logical follow on from the RP6 work.
- Findings from this trial and other benchmarking projects suggest there is material capacity which can be unlocked by virtue of real-time ratings.
- Comparison with conventional reinforcement also shows the potential for financial benefit.
- Given the RP6 work, review of previous learnings does not seem a necessary activity.
- It is also not clear why the level of engagement with SONI should attract so much resource at an early stage.
- Otherwise, we are content to support the costs of this project.

<b>Classification</b>	<b>Category 1</b>
<b>Recommendation</b>	<b>£0.69m</b>
<b>DD Actions</b>	
<ul style="list-style-type: none"> <li>• No action required.</li> </ul>	

**Table 4.12: Review of RTTR request**

## Ex-ante allowances

- 4.9 The consequence of our deliberations is summarised in Table 4.13 below. For the draft determination we are proposing allowances of £4.7m which is equivalent to 53.5% of the business plan request.
- 4.10 There is however the potential to increase this allowance on provision of acceptable supporting information.
- 4.11 Any project not approved as part of our final determination can be reconsidered at a later date if further detail and justification is provided.

Innovation Project	NIEN Request	UR Allowance
Data Analytics	£0.65m	£0.00m
Real-Time Fault Level Monitoring (RTFLM)	£1.03m	£0.98m
HV Active Network Management (HV ANM)	£0.69m	£0.66m
Vehicle to X	£1.26m	£0.00m
DC Readiness	£0.50m	£0.39m
Flexibility Market Development	£0.88m	£0.82m
Virtual STATCOM	£0.47m	£0.45m
Micro-Resilience	£0.74m	£0.72m
Supporting Vulnerable Customers	£0.36m	£0.00m
Customer Load Active System Services	£1.43m	£0.00m
Real-Time Thermal Rating at 110kV	£0.78m	£0.69m
Totals	£8.79m	£4.70m

**Table 4.13: RP7 innovation request and allowances in 2021-22 prices**

## 5. Conclusions

### RP7 innovation framework and decisions

- 5.1 The outcome of our deliberations on the innovation framework can be summarised as follows:
- a) Provision of both an ex-ante allowance and an innovation re-opener mechanism has been accepted.
  - b) We propose an initial ex-ante allowance of £4.7m based on a bottom-up assessment of the business cases.
  - c) The innovation uncertainty mechanism will be put in place and we expect this to outturn at £4m for the RP7 period, though no formal cap is proposed.
  - d) Only one window of opportunity for innovation application can be made at the mid-point of the price control (August 2028).
  - e) Business cases in line with NIE Networks criteria for submissions should be provided to support cost requests.
  - f) Annual reporting by project should become a part of the regulatory reporting process. This should also be published by NIE Networks.
  - g) Overspend against collective innovation allowances will be subject to 50:50 cost sharing.
  - h) Underspend against collective allowances should offset future cost submissions. Spend against allowance will need to be considered against any future re-opener or RP8 cost requests.
  - i) An Innovation Council is not mandated by the UR. NIE Networks will need to consider how it engages with consumers and other stakeholders to support any submissions.
- 5.2 We consider that the draft determination provides sufficient flexibility whilst not exposing consumers to unnecessary risk.