

Decision

Decision on the 2019 Electricity Distribution Innovation Roll-out Mechanism

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Overview:

The purpose of the Innovation Roll-out Mechanism (IRM) is to facilitate the roll-out of a Proven Innovation that meets certain requirements into business-as-usual. This document sets out our decision on the application received in the second RIIO-ED1 IRM window that opened in May 2019.

We have decided to award £15.09 million IRM funding to Electricity North West Limited following our positive assessment of their Smart Street proposal against the requirements in the IRM licence condition. This document sets out the reasons for our decision.

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Context

Ofgem is the Office of Gas and Electricity Markets, which regulates the electricity and gas industries in Great Britain. Our principal duty is to protect the interests of existing and future gas and electricity consumers.

One way in which we protect the interests of consumers is by regulating the network companies through price controls. We set price controls to specify the services and level of performance the network companies must provide and to restrict the amount of money the network companies can recover from consumers through network charges.

The energy system is undergoing rapid and significant change. Consequently, network-related costs could increase significantly from connecting large volumes of generation, as well as from managing the impacts of new low carbon technologies operating on the network. We think it is in consumers' interests that the network companies respond creatively to the challenges posed by these changes.

New approaches can deliver more efficient and timely services needed by network consumers and lessen the cost impact on consumers. This might be achieved, for example, by adopting new technology, different operational practices and novel commercial arrangements.

To encourage the companies to play a full role in exploring opportunities, we put innovation at the forefront of the RIIO price control framework - Revenue = Incentives + Innovation + Outputs. This framework was introduced for gas distribution companies (RIIO-GD1) and gas and electricity transmission companies (RIIO-T1) in 2013 and for electricity distribution companies (RIIO-ED1) in 2015.

One of the innovation components of RIIO is the Innovation Roll-out Mechanism (IRM). The purpose of the IRM is to provide additional funding to licensees to facilitate the roll-out of innovation that meets certain requirements into business-as-usual.

An electricity distribution network licensee can propose to make use of the IRM in the two application windows available during the RIIO-ED1 price control, which runs from April 2015 to March 2023. The first window ran from 1 to 31 May 2017; this document deals with the second window, which ran from 1 to 31 May 2019, and sets out our decision on the application received in this second window.

Associated documents

[Electricity North West Limited Smart Street IRM Submission](#)

[Consultation on submission to the second RIIO-ED1 Innovation Roll-out mechanism window](#)

[IRM guidance document](#)

[ED1 Price Control Financial Handbook \(slow-track licensees\)](#)

1. Executive summary

- 1.1. Ofgem introduced a number of uncertainty mechanisms for costs that were uncertain at the time of establishing the first RIIO electricity distribution price control (RIIO-ED1), which runs from 1 April 2015 to 31 March 2023.
- 1.2. The Innovation Roll-out Mechanism (IRM) is a reopener provision for licensees to propose a Relevant Adjustment to their allowances to facilitate the Roll-out of a Proven Innovation.¹
- 1.3. In May 2019, we received a submission from Electricity North West Limited (ENWL) requesting an additional £15.09m (2012-13 prices)² to roll out the application of an innovation project funded under the Low Carbon Networks Fund (LCNF) mechanism, the Smart Street programme. The investment involves installing novel optimisation software using real-time measurement data to manage voltage on the low voltage (LV) network, linking new substation assets to create an integrated system that allows real-time network reconfiguration.
- 1.4. On 7 June 2019, we published an informal consultation on ENWL’s submission on our website³, which closed on 5 July 2019. We considered the responses to that consultation in our assessment of ENWL’s submission, and on 15 August 2019 we consulted with ENWL, as the proposing licensee, on our minded-to decision to allow the requested funding. ENWL responded on 28 August 2019 and this document outlines our decision.

Decision

- 1.5. We have decided to allow the requested £15.09m IRM funding to ENWL to roll out the Smart Street programme, having positively assessed it against the criteria set out in the IRM licence condition.

¹ In Part I of CRC 3D the definition of Proven Innovation means “an Innovation that the licensee can demonstrate has been successfully trialled or demonstrated either as part of its Distribution System or elsewhere.”

² Unless otherwise stated, all prices in this document are in 2012-13 prices.

³ <https://www.ofgem.gov.uk/publications-and-updates/consultation-submission-received-under-riio-ed1-innovation-roll-out-mechanism-window-2>

Next steps

- 1.6. Our decision will be implemented through the 2019 Annual Iteration Process, which means that adjustments to ENWL’s allowed revenues will take place from 2020-2021 (see Chapter 5 for more detail).

2. Details of proposal

ENWL proposal for Smart Street roll-out

- 2.1. We received a submission from ENWL proposing a Relevant Adjustment of £15.09m to its allowed expenditure for Innovation Roll-out for the remainder of the RIIO-ED1 period. ENWL gave Notice of its proposal during the second IRM application window, which ran from 1 May to 31 May 2019.
- 2.2. The £15.09m requested in the proposal is for the roll-out of a successful Low Carbon Networks Fund (LCNF)⁴ project, Smart Street, to a further 180 distribution substations. Smart Street uses optimisation software to control voltage limits on the low voltage (LV) network, by integrating controllable switches, transformers, and circuit breakers to allow real-time reconfiguration of voltage levels. The proposal comprises:
- £0.97m for project planning and management
 - £12.75m for materials and installation
 - £1.38m for software materials and integration.
- 2.3. ENWL's proposal outlines the level of confidence they have in their predictions of where clusters of low carbon technologies (LCTs) will occur across their network. Their forecasts include evidence from local authority and social housing provider investment programmes and focus on areas where LCTs such as heat pumps and Electric Vehicle (EV) uptake will cause greater peaks in demand and supply and so cause voltage levels to rise and drop below statutory levels. Such peaks are predicted to be six times greater than the limits the current design can manage to keep voltage levels stable and within the thermal capacity of the assets.
- 2.4. ENWL have outlined the benefits to consumers from this project in a number of areas. These benefits include customers being able to reduce their energy bills as appliances run more efficiently at ideal voltage levels - these energy efficiency

⁴ The LCNF allowed up to £500m to support projects sponsored by the Distribution Network Operators (DNOs) to try out new technology, operating and commercial arrangements. The aim of the projects is to help all DNOs understand how they can provide security of supply at value for money as Britain moves to a low carbon economy. More information can be found here: [Ofgem website for Low Carbon Network Fund](#)

savings are estimated at £2.74m per annum up to 2030 for the estimated 45,000 customers connected to the substations included in the roll-out.

- 2.5. In addition, ENWL have estimated that the additional network capacity released, including reduced losses, will result in a net benefit for customers of £16.55m by 2030.
- 2.6. ENWL also estimate that the carbon savings (reduced carbon emissions through avoided network reinforcement, reduced energy consumption and reduced technical losses) are at around 144,806 tCO₂e⁵ by 2055 across the 180 substations; an estimated worth of £7.09m.

Stakeholder views

- 2.7. We received three responses to the informal consultation we published on our website on 7 June 2019.⁶ These responses were from E.ON, Citizens Advice (CA) and Northern Powergrid (NPG). We set out respondents' views here and address them in Chapter 4, 'Assessment of proposal'.
- 2.8. E.ON agreed that the proposed roll-out does suggest a net financial benefit for consumers. They were concerned, however, that the proposal may reduce competition in future LV flexibility markets, as once consumers have paid for the capital expense, the software appears to incur very low operational costs. As such, ENWL may be able to bid into any LV flexibility market at near zero cost. Any alternative solution may not be able to compete as it will not be able to recoup its capital layout through similar innovation funding. E.ON consider that such an advantage could delay the uptake of LV flexibility markets by several years, but do accept that such markets are not yet functioning and so flexibility alternatives are not yet open to ENWL.
- 2.9. CA welcomed ENWL's innovation project and its associated consumer benefits. CA queried why the analysis of alternatives only considered traditional network reinforcement rather than, for example, the use of third party Distributed Energy

⁵ tCO₂e means tonnes of carbon dioxide *equivalent*, ie the amount of activity that would have produced the same effect on the atmosphere as 144,806 tonnes of carbon dioxide, even though the predicted emissions may have been a mix of different greenhouse gases.

⁶ <https://www.ofgem.gov.uk/publications-and-updates/consultation-submission-received-under-riio-ed1-innovation-roll-out-mechanism-window-2>

Resource services. CA also queried why site selection focused on sites projected to require reinforcement during RIIO-ED2 as opposed to RIIO-ED1.

- 2.10. NPg agreed that voltage management put forward in the proposal would deliver the benefits outlined, including environmental and carbon benefits. They agreed the proposal was a Proven Innovation, and was not part of an Ordinary Business Arrangement.⁷
- 2.11. NPg queried the analysis of alternative solutions, saying that the analysis of thicker cables as a method of traditional reinforcement would be a significantly higher cost than other traditional methods, such as network and load reconfiguration. NPg suggested that it was not clear in the submission whether the thicker cables were part of the counterfactual. NPg also queried the lack of consideration of alternative methods of voltage management, eg through voltage reduction, or dynamic smart meter control, or comparison against techniques still in development. However, NPg did state that these alternatives offer potential benefits for consumers only over the short to medium term, whereas Smart Street may deliver benefits over the longer term.
- 2.12. On 15 August 2019, we consulted with ENWL, as the proposing licensee as per CRC 3D.16(a) of the licence condition, on our 'minded-to' position to approve the proposal. ENWL responded within the consultation period agreeing with our assessment.

⁷ Part I of CRC 3D defines an Ordinary Business Arrangement as "one or more of the following: (a) a specific piece of existing Network Equipment; (b) an arrangement or application of existing Network Equipment; (c) an operational practice; or (d) a commercial arrangement, that, whether singly or in any combination at the time of a Notice given by the licensee under Part C of this condition: (i) is not (except in the context of a trial) being used by a licensee in an adapted form or in a novel way or (ii) is not, in all material respects, something in respect of which another licensee is receiving, or has received, additional funding by virtue of the equivalent condition to this condition in that licensee's licence."

3. Our decision-making process

- 3.1. Our assessment of ENWL’s submission has been carried out in accordance with Charge Restriction Condition (CRC) 3D of ENWL’s Special Licence Conditions, which sets out what constitutes a proposal for a Relevant Adjustment by the licensee, and in accordance with the ED1 Price Control Financial Handbook.⁸
- 3.2. To be eligible under CRC 3D.8, the Authority must be satisfied that the activity funded through the Relevant Adjustment:
- a) will deliver Carbon Benefits or any wider environmental benefits
 - b) will provide long-term value for money for electricity consumers
 - c) will not enable the licensee to receive commercial benefits from the Roll-out within the remainder of the price control period (for instance, where the Roll-out of a Proven Innovation will lead to cost savings (including benefits from other incentive mechanisms) equal to or greater than its implementation costs within the Price Control Period)
 - d) will only be used to fund the Roll-out of a Proven Innovation.
- 3.3. We also considered whether the proposal had been submitted in line with the requirements in:
- a) CRC 3D.9 – the costs constitute a material amount as specified for the licensee in Appendix 1 of CRC 3D
 - b) CRC 3D.10 – the costs are not otherwise recoverable under the Charge Restriction Conditions, and have not yet been incurred
 - c) CRC 3D.12 – the proposal, which complies with the provisions of 3D.9 and 3D.10, was put forward in the appropriate application window.
- 3.4. In addition, CRC 3D.13 sets out that a Notice from a licensee must:
- a) state any statutory obligations or any requirements of the licence to which the Notice relates
 - b) describe the Proven Innovation that the licensee proposes to Roll-out

⁸ [ED1 Price Control Financial Handbook \(slow-track licensees\)](#): Chapter 12. Innovation Roll-out Mechanism allowed expenditure – financial adjustment methodology

- c) propose the amount of the Relevant Adjustment and set out, by reference to the Innovation Roll-out Costs, the basis on which the licensee has calculated it
 - d) demonstrate that the costs to be recovered through the Relevant Adjustment will be a material amount for the purposes of paragraph 3D.9 of CRC 3D
 - e) demonstrate how each of the criteria set out in Part B of CRC 3D will be fulfilled by the roll-out using the additional funding sought
 - f) propose relevant outputs or other end products against which the Roll-out will be assessed
 - g) set out the revisions to IRM values that the licensee considers should be made to implement the Relevant Adjustment
 - h) state the date from which it is proposed that the Relevant Adjustment would have effect (“the adjustment date”) and the Regulatory Years to which the Relevant Adjustment would apply.
- 3.5. For the purposes of the requirement at paragraph 3D.13(d), the ‘material amount’ is set out in Appendix 1 of CRC 3D.
- 3.6. We have also taken into consideration the responses received to the consultation we published on 7 June 2019⁹, supplementary information provided by ENWL in response to our specific questions on the proposal, and ENWL’s response to our ‘minded-to’ consultation.

⁹ <https://www.ofgem.gov.uk/publications-and-updates/consultation-submission-received-under-riio-ed1-innovation-roll-out-mechanism-window-2>

4. Assessment of proposal

Section summary

This section sets out our assessment of the submission from ENWL for IRM funding relating to management of their LV network.

Compliance with application process

4.1. We consider ENWL’s proposal for a Relevant Adjustment meet the criteria set out in 3D.9, 3D.10, and 3D.12 as:

- the costs constitute a material amount as specified for the licensee¹⁰ (3D.9)
- it enables ENWL to recover Innovation Roll-out Costs associated with a single Proven Innovation that would not otherwise be recoverable under the Charge Restriction Conditions (3D.10(a))
- it is in respect of Innovation Roll-out Costs not yet incurred (3D.10(b))
- it was proposed by Notice during the appropriate application window (3D.12).

4.2. We have also assessed ENWL’s submission in accordance with the criteria set out in 3D.8 and 3D.13, which assessment is set out below.

Assessment of proposal content

CRC Part B: Features that qualify an Innovation Roll-out for additional funding

3D.8(a) Carbon Benefits or any wider environmental benefits

4.3. We note that the roll-out will focus on areas where high levels of low carbon technologies are predicted, and so the voltage management scheme will facilitate the network to manage increased connections with the associated peaks in demand and supply.

¹⁰ Appendix 1 of CRC 3D specifies the ‘material amount’ for ENWL to be £6.21m (2012/13 prices).

- 4.4. ENWL's proposal estimates that Smart Street will deliver a potential carbon saving of 144,860 tCO₂e by 2055 across the 180 substations involved in the roll-out. The reductions will come from avoided network reinforcement, reduced energy consumption and reduced technical losses.
- 4.5. The estimated carbon savings from avoided network reinforcement are in line with Ofgem's cost benefit analysis (CBA) tool and based on additional cable for an 11kV/LV substation with a predicted fluctuation of between +5% and -2% outside the statutory limits. The avoided losses from this reinforcement have been deducted from the total carbon benefits in the proposal.
- 4.6. The proposal estimates that real-time optimisation of voltage levels will enable the supply voltage to maintain an optimal level at which appliances will save energy by working more efficiently. The analysis provided by ENWL includes historical data from the initial innovation project and demonstrates energy savings of between 5-8% per consumer per annum.
- 4.7. Improvements in technical losses are estimated to come from the use of meshing feeders within the Smart Street system, at a reduction of 6% (although trial has demonstrated up to 7% reduction).
- 4.8. We consider the assumptions and estimates – based on historical data and credible forecasts – provided in the CBA are reasonable, and so are satisfied that the roll-out of the scheme is likely to deliver carbon benefits.

3D.8(b) Long-term value for money for electricity consumers

- 4.9. In total, ENWL estimate the scheme will have financial net benefits for consumers of £43.95m by 2030, comprising £27.4m through increased energy efficiency savings for the 45,000 consumers connected to the 180 substations and £16.55m to all consumers from increased network capacity, reduced losses, reduced Consumer Minutes Lost (CML) and Consumer Interruptions (CI) and a reduction in Distribution Use of System (DUoS) charges.
- 4.10. ENWL have estimated these net benefits by extrapolating existing trial data into baseline, low and high scenarios in the CBA and by comparing benefits to a counterfactual of traditional reinforcement. The net benefits claimed are outcomes of the high scenario. We are satisfied that the high scenario is achievable, but that the low and baseline scenarios would still deliver worthwhile benefits to consumers.

- 4.11. We consider that the scenarios and variables chosen by ENWL are reasonable. We have stress-tested the assumptions at lower limits than those put forward by ENWL, eg for predicted energy savings, average loading and loss reduction. We find that although this stress-testing puts back the payback date by between one to two years, we do not consider this delay to be significant as the proposal still delivers substantial benefits in the mid to longer term (ie from 2023/4 to 2050).
- 4.12. We consider that ENWL’s counterfactual would have been more thorough had it included non-traditional reinforcement alternatives (although we consider the traditional reinforcement costs put forward to be reasonable and benchmarked against actual costs). We agree with respondents to the consultation’s views that dynamic smart meter control (or other methods of voltage reduction) could deliver results in the short term without the capital investment, but consider that Smart Street could deliver a larger scale of benefits than these alternatives over the mid to longer term.
- 4.13. In its response to the informal consultation, E.ON were concerned that this proposal might unfairly advantage ENWL’s ability to bid into flexibility markets, due to their ability to recoup capital costs through the IRM. We have set out some emerging thinking on appropriate roles for Distribution Network Operators (DNO) providing contestable services in our Distribution System Operator position paper.¹¹ In early 2020, we will be consulting on the RIIO-ED2 regulatory treatment of the provision of Customer Load Active System Services (CLASS) by DNOs to the Electricity System Operator for the purpose of residual balancing. CLASS represents application of similar voltage control technologies, as used at primary substations, and in the process of our policy development, we will consider how advantages for the DNO could affect competition.¹²

¹¹ <https://www.ofgem.gov.uk/publications-and-updates/ofgem-position-paper-distribution-system-operation-our-approach-and-regulatory-priorities>

¹² CLASS was an innovation project that developed voltage management control abilities to reduce effective demand. In 2016, the Authority issued a direction that DNOs could use voltage control using capabilities developed in project CLASS to sell services to the ESO ancillary services market, with remuneration under Directly Remunerated Services 8 (DRS8), meaning that revenues are shared with consumers. This was based on the anticipated overall benefit to consumers: through contributing to the efficient procurement of system balancing and by providing consumers a share in any net revenue generated. The Direction applied until the end of RIIO-ED1. Closedown report: <https://www.ofgem.gov.uk/publications-and-updates/electricity-northwest-limited-customer-load-activesystem-services-close-down-report-and-direction>
https://www.ofgem.gov.uk/system/files/docs/2016/04/dno_voltage_control_drs8_direction.pdf

- 4.14. We also consider the concern raised by E.ON may be a wider point on the rationale of dedicated innovation funding within the RIIO framework (not just the IRM, but also the Network Innovation Competition and Network Innovation Allowance). As we set out in documents establishing the RIIO-1 framework¹³, we believe that the provision of additional funding for innovation activities that benefit consumers is necessary and desirable, where DNOs would be unlikely to undertake the activities in the absence of additional funding.
- 4.15. We accept ENWL’s reasoning for not using LV flexibility services as a counterfactual, as suggested by NPg and CA. ENWL have found that LV flexibility markets at the proposed locations do not currently exist and there is limited information to create a credible counterfactual of this type. On balance, we consider that it is in the interests of both existing and future consumers that this proposal will allow them to see net and cumulative benefits within the next two to five years, as well as in the longer term. Any further proposal to extend the scope of the Smart Street scheme at the time of RIIO-2 Electricity Distribution Business Plan submission will be considered in the context of any emerging flexibility markets.
- 4.16. CA included in their response a query as to why sites requiring reinforcement more immediately under the ED1 programme were not a priority in this roll-out. This roll-out seeks to address a very specific set of issues connected to low carbon technology causing more extreme variability on the network; these issues are not necessarily the same constraint issues facing the sites already identified under the ED1 replacement programme. We are satisfied that ENWL’s methodology for choice of site for this particular solution to longer term issues is reasonable, based as it is on areas that a) have the highest predicted clusters of LCTs and b) further refined within that group to assist fuel-poor customers. We expect any sites that fit those criteria and are also in the ED1 reinforcement programme will be removed from the ED1 programme and included in this roll-out.
- 4.17. ENWL have proposed the following key performance indicators to monitor how the Smart Street scheme will benefit their consumers. These are:
- Monthly tracking of technology installation at substations against project plan

¹³ For example, see chapter 10 of the Strategy decision for the RIIO-ED1 price control: outputs, incentives and innovation, Ofgem, 4 March 2013; https://www.ofgem.gov.uk/sites/default/files/docs/2013/02/riioed1decoutputsincentives_0.pdf

- Tracking of optimisation technology integration against project plan
- Monthly tracking of costs across the programme
- Tracking of customer numbers associated with roll-out sites
- Savings in demand reduction
- Annual reporting of costs through RIGs Table E8¹⁴
- Benefits achieved from roll-out through RIGs Table E6¹⁵

4.18. We consider these key performance indicators are sufficient to quantify the effectiveness of the project against the estimated benefits put forward in the proposal. Overall, we are satisfied that ENWL's net benefit CBA modelling gives reasonable confidence that rolling out Smart Street is in the long-term interests of consumers. With no Intellectual Property Rights associated with the project, there are no barriers to the adoption of this system by other networks.

3D.8(c) Will not enable the licensee to receive commercial benefits from the Roll-out within the remainder of the Price Control Period

4.19. ENWL have identified that there may be potential benefits associated with an improvement in performance against the Interruption Incentive Scheme (IIS) through a reduction in CML and CI, estimated at £30k by 2023. We consider this estimate to be reasonable and note that even a doubling in improvement in performance for this group of customers would only deliver marginally increased financial benefits for ENWL and not material for the purposes of CRC 3D.8.

4.20. ENWL also identified potential benefits through two other RIIO-ED1 incentives: the Incentive on Connections Engagement (ICE), and the Broad Measure of Customer Satisfaction (BMCS). These benefits have not been quantified by ENWL.

4.21. As the proposal would provide more capacity on the existing network – by enabling more LCT connections to be absorbed without additional reinforcement, and earlier than otherwise – ENWL's ICE performance may improve. However, as the ICE scheme only imposes penalties for underachievement against targets and does not provide licensees with financial rewards, we do not consider it relevant for the purpose of assessing the potential 'commercial benefits' of this proposal.

¹⁴ Table E8 in Annex J of the Environment and Innovation pack in the RIIO-ED1 Regulatory Instructions and Guidance (RIGs)

¹⁵ Table E6 in Annex J of the Environment and Innovation pack in the RIIO-ED1 RIGs

- 4.22. The reduction in energy use estimated by the proposal will lead to reduced energy bills for consumers, which may lead to improvements in ENWL’s BMCS performance. ENWL have not quantified potential benefits under this incentive, but our own analysis suggests that even with a 100% improvement in performance for these customers over the remainder of the price control, the potential financial benefits to ENWL would not be material for the purposes of CRC 3D.8.
- 4.23. In conclusion, we are satisfied that the sum of these potential benefits even at the extreme end of improvement scenarios will not, cumulatively, be equal to or exceed the implementation costs of the roll-out within the Price Control Period.

3D.8(d) Used to fund the Roll-out¹⁶ of a Proven Innovation¹⁷

- 4.24. The Smart Street scheme that ENWL propose to roll out will install novel software to centrally manage voltage at 180 LV substations, in a new arrangement of centrally controlled switches, on load tap changers and circuit breakers.
- 4.25. We consider the integration of novel optimisation software with a mix of both novel and existing classes of assets, to constitute Innovation under the CRC 3D.24 definition of “a novel arrangement or application of existing Network Equipment or New Network Equipment”, which is not considered an Ordinary Business Arrangement¹⁸, as it is not an arrangement in use by another licensee, or something for which another licensee is being funded through an equivalent condition to CRC 3D.
- 4.26. ENWL provided evidence that Smart Street has been successfully trialled at 44 substations as a LCNF project, completing and publishing a closedown report in April

¹⁶ Roll-out “means the incorporation of a Proven Innovation into an Ordinary Business Arrangement” (CRC 3D.24).

¹⁷ Proven Innovation “means an Innovation that the licensee can demonstrate has been successfully trialled or demonstrated either as part of its Distribution System or elsewhere” (CRC 3D.24).

¹⁸ Ordinary Business Arrangement “means one or more of the following:

(a) a specific piece of existing Network Equipment;
(b) an arrangement or application of existing Network Equipment;
(c) an operational practice; or
(d) a commercial arrangement,

that, whether singly or in any combination at the time of a Notice given by the licensee under Part C of this condition:

(i) is not (except in the context of a trial) being used by a licensee in an adapted form or in a novel way; or
(ii) is not, in all material respects, something in respect of which another licensee is receiving, or has received, additional funding by virtue of the equivalent condition to this condition in that licensee’s licence.” (CRC 3D.24)

2018¹⁹. We agree that this meets the requirements of a Proven Innovation, as per CRC 3D.24.

4.27. In our 7 June 2019 consultation, we sought views on whether the technology ENWL wishes to roll out falls within the definitions of a Proven Innovation or Ordinary Business Arrangement. Only one respondent (NPg) responded to this question, and agreed that the proposal fell within the IRM licence condition definition of a Proven Innovation. Taking this into account, and having reviewed current operating practices, we have concluded that there is no similar arrangement in operation in GB's distribution networks. Accordingly, we are satisfied that the activity being funded through the Relevant Adjustment will only be used to fund the Roll-out of a Proven Innovation.

`Efficient cost' assessment

4.28. We have assessed three main elements of ENWL's project costs for rolling out the Smart Street scheme. These are: the asset and asset installation costs, software and software installation costs, and project management costs.

Asset and asset installation costs

4.29. The site assets and associated installation costs (ie link box switches, LV remote terminal units, LV circuit breakers, remote control units, and on load tap changing transformers) are the largest cost element of the project at £12.93m. ENWL have benchmarked asset costs for this proposal against a) actual costs as incurred in the initial LCNF projects, and b) existing unit costs where already known (eg contractor day rates). These benchmarked costs will be put out for competitive tender (rather than the LCNF suppliers as default) at a decreased unit cost due to economies of scale from the roll-out; it is these decreased costs that are included in ENWL's request.

4.30. The asset installation costs are broken down into volume and day rates. The volume and timescales match the proposed work programme of the roll-out and we consider the day rates to be within acceptable ranges.

¹⁹ <https://www.enwl.co.uk/globalassets/innovation/smart-street/smart-street-key-docs/smart-street-closedown-report.pdf>

- 4.31. We are satisfied that the procurement and installation costs evidence is robust and correctly benchmarked against actual costs from the initial innovation project, where applicable. We are also satisfied that ENWL have identified reasonable procurement-at-scale savings for this proposal, where relevant.

Software installation costs

- 4.32. We were concerned that the costs for software and installation, of £1.24m, had been spread across not just the 180 substations included in the roll-out proposal, but across an additional 1,000 substations that ENWL intended to include in the scheme during RIIO-ED2 – so 1,180 in total. On request, ENWL provided a revised CBA that allocated software and associated costs across just the 180 substations in the roll-out. We are satisfied that this revised CBA still demonstrates significant savings per substation (in the region of £14,000) compared to traditional reinforcement solutions.
- 4.33. ENWL estimate that Smart Street is capable of being applied to potentially 64% of their network – around 220MW of additional capacity – but at lower cost as upfront purchase, configuration, and testing are one-off costs.
- 4.34. We consider there is a reasonable likelihood that the amount of LCTs connecting to the network – and their impact on voltage levels – will meet the levels required to see the benefits of this roll-out materialise in full. Should they not, or be delayed later than expected, the energy efficiency savings will still materialise and still enable the project to break even, albeit two to three years later than predicted. As such, we are satisfied that the software purchase and installation costs to be efficient both for the length of this project, as well as for future expansion of the scheme.

Project management and planning costs

- 4.35. We also reviewed the project management and planning costs of £0.56m and consider these to be within acceptable ranges.
- 4.36. In summary, therefore, having reviewed the main cost elements of the funding requested, and the steps proposed by ENWL to find the most cost-effective contracts, where needed, we are satisfied that the £15.09m IRM funding request to roll-out the Smart Street scheme is reasonable and efficient.

CRC Part E: Other requirements relating to the licensee’s proposal

4.37. CRC 3D.13 requires a Notice served by the licensee to contain specific information.

We are satisfied that ENWL’s Notice:

- states the statutory obligations and requirements of this licence to which their Notice relates
- describes the Proven Innovation that ENWL proposes to roll-out
- proposes the amount of the Relevant Adjustment, and sets out the basis on which ENWL has calculated it
- demonstrates that the costs to be recovered will be a ‘material amount’ for the purposes of paragraph 3D.9 of the condition
- demonstrates how each of the criteria set out in Part B of the condition will be fulfilled by the Roll-out using the additional funding sought
- proposes relevant outputs or other end products against which the roll-out will be assessed
- sets out the revisions to IRM values that ENWL considers should be made to implement the Relevant Adjustment; and
- states the date which it is proposed that the Relevant Adjustment would have effect and the regulatory years to which the Relevant Adjustment would apply.

Our decision

4.38. Following our analysis, we have decided to make a Relevant Adjustment of £15.09m to facilitate the ENWL Smart Street roll-out.

5. Next steps

Section summary

This section explains how we will implement our decision to award funding for the Smart Street roll-out.

Decision

5.1. We have assessed that ENWL’s IRM proposal for Smart Street meets the requirements of CRC 3D and the ED1 Price Control Financial Handbook. We have also assessed that the requested funding represents an efficient cost of rolling out Smart Street. Therefore, we have decided that the proposed Relevant Adjustment of £15.09m IRM funding for the project should be made.

Funding

5.2. To implement this decision, we will adjust ENWL’s allowed expenditure under RIIO-ED1 as set out in the table below.²⁰

	2020/21	2021/22	2022/23	Total
£m in 2012/13 prices	4.64	8.20	2.24	15.09

Outputs

5.3. Smart Street is expected to deliver long-term benefits to ENWL’s consumers through reduced bills, avoided reinforcement costs, and reduced network losses. ENWL will report to us on the following key performance indicators:

- Annual reporting of costs - through RIGs Table E821

²⁰ Please note that where sums do not match the overall total, this is due to rounding.

²¹ Table E8 in Annex J of the Environment and Innovation pack in the RIIO-ED1 RIGs.

- If expected benefits from roll-out have been achieved - through RIGs Table E622.
- 5.4. If ENWL do not deliver on the outputs they proposed, we will consider what action is appropriate in the interests of electricity consumers.

Price control financial model annual iteration process

- 5.5. The IRM is an input to the RIIO-ED1 price control financial model that adjusts licensees' annual revenues each year over the price control period. Allowed revenues are updated annually for a licensee's performance, the outputs it delivers, as well as additional funding being made available under mechanisms such as the IRM.
- 5.6. The Authority will issue a direction to adjust ENWL's base revenue by 30 November 2019, which adjustment will start for financial year 2020/2021. The arrangements for determining revised values, determining the value of the "MOD" term, and for carrying out the annual iteration process are in the special conditions of ENWL's licence and in the Price Control Financial Handbook²³.

Your feedback

5.7. We believe that consultation is at the heart of good policy development. We are keen to receive your comments about this report. We'd also like to get your answers to these questions:

1. Do you have any comments about the overall quality of this document?
2. Do you have any comments about its tone and content?
3. Was it easy to read and understand? Or could it have been better written?
4. Are its conclusions balanced?
5. Did it make reasoned recommendations?
6. Any further comments?

Please send any general feedback comments to RIIO-ED1@ofgem.gov.uk.

²² Table E6 in Annex J of the Environment and Innovation pack in the RIIO-ED1 RIGs

²³ [Latest price control financial handbooks for RIIO Network Operator licensees](#)