

# Decision

## RIIO-ED1 Green Recovery Scheme

**Publication date:** 26 August 2021

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The current RIIO price control for electricity distribution (RIIO-ED1) runs from 1 April 2015 to 31 March 2023. In February 2021 we published an Open Letter on the Green Recovery Scheme. This Scheme is aimed at accelerating low regrets, shovel ready network investment under the remainder of the RIIO-ED1 period to stimulate economic recovery and support faster delivery of decarbonisation benefits for consumers, while supporting Government's climate change ambitions.

Following a call for evidence exercise and period of stakeholder engagement, each of the Distribution Network Operators (DNOs) brought forward investment proposals under the Scheme for our assessment and this document sets out our decisions on these.

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## Executive Summary

During 2020 Ofgem worked with the energy networks to develop a collaborative model to tackle the COVID-19 crisis. This approach ensured that the network operators were able to prioritise network reliability and security of supply and the provision of essential services to consumers, while ensuring all staff and consumers were kept safe.

Once the initial crisis phase of the pandemic had passed, Ofgem worked together with the energy network operators across the electricity and gas sectors to build on the success of this model and look at measures that could help deliver faster decarbonisation benefits to consumers while supporting a green economic recovery across the country.

This model invited the networks to work with their local customers and stakeholders to identify a range of shovel-ready Net Zero related projects that could be brought forward and delivered under the existing price control for the sector, which still has two years to run.

In response Distribution Network Operators (DNOs) have collectively submitted over 200 proposals at a total investment value of over £366m. Following an assessment process, we have decided that £301.3m of these investments can progress for delivery under the existing RIIO-ED1 price control. Of this, £126.78m would come from existing network company allowances, with £174.52m being made available through new allowances. The full list of submitted and accepted investment values by DNO is summarised in the following table.

**Table 1: Green Recovery Proposals by DNO**

Distribution Network Operator (DNO)	Number of proposals submitted	Value of submitted proposals (£m)	Value of proposals accepted (£m)	Existing or new allowances (based on current forecasts)
ENWL	11	20.28	20.28	Existing
NPg	14	75.1	53.1	New
SPEN	44	89.37	61.7	New
SSEN	12	40.92	40.92	New
UKPN	90	82.4	66.1	Existing
WPD	40	58.4	59.1	Combination
<b>Total</b>	<b>211</b>	<b>366.47</b>	<b>301.3</b>	<b>Combination</b>

A significant focus of these investments is network capacity to enable rapid charging of Electric Vehicles (EVs), including at Motorway Service Areas (MSAs) as well as other key transit and city centre hubs. Wider benefits also include capacity to support further growth in renewable generation and the decarbonisation of heat.

These decisions cover the latest phase of an ongoing Green Recovery programme. We will continue to work with the electricity distribution networks to consider additional phases of the programme, including in the context of the price control setting process for the RIIO-ED2 controls that will start on 1 April 2023.

In the recently implemented RIIO-2 price controls for the transmission and gas distribution sectors, Ofgem is providing substantial innovation and feasibility study funding to help drive the greening of these networks. We have designed these price controls to be flexible and are working closely with government and network companies to understand Net Zero investment needs and stand ready to unlock significant additional funding if needed.

## 1. Introduction

### Overview

1.1. This document sets out our decisions on the RIIO-ED1 Green Recovery Scheme. This covers:

- the process we have followed
- our regulatory treatment of Green Recovery Scheme expenditure
- our approach to assessing the proposals submitted by the Distribution Network Operators (DNOs)
- a summary of each DNO's proposals and our assessment.

### Context

1.2. In summer 2020, following the immediate response to the COVID-19 pandemic, Ofgem engaged the energy industry to consider and progress actions that could facilitate a green economic recovery while accelerating the delivery of decarbonisation benefits to energy consumers.

1.3. Significant opportunities were identified by Ofgem and the networks under an overall "Green Recovery programme", broadly split into three main phases and initial areas of focus:

- Enabling the fastest possible ramp-up of investment programs that had required to be scaled back because of COVID-19 restrictions and prevailing Government guidelines
- Accelerating planned investment programs from future years to start in 2020 to help reactivate supply chains and deliver earlier benefits to consumers
- Identifying appropriate opportunities to enable new, accelerated investment programs to support future energy user needs and help facilitate the delivery of Government climate change ambitions.

1.4. In the RIIO-ED1 price control, which runs until April 2023, the Distribution Network Operators (DNOs) have already accelerated £80m of projects to start in 2020. This brings forward planned investments from future years to support new connections as well as

preparing the grids for predicted increases in electricity demand, including from EVs and heat pumps.

1.5. In December 2020 we also confirmed our Final Determinations for the transmission and gas distribution networks and Electricity System Operator (ESO) RIIO-2 price controls,<sup>1</sup> which started on 1 April 2021. This confirmed a baseline funding package of up to £30bn to maintain these networks and support companies in the transition to Net Zero, including funding to connect low carbon generation across the country. In addition, these Determinations confirmed a flexible package of uncertainty mechanisms enabling £10bn or more of additional funding to allow companies to bring forward strategic network investments during the price control to help meet Net Zero.

1.6. In addition to these commitments and decisions, and in the context of recent Government statements on its climate change ambitions for the sector, we invited the energy distribution network companies (the Distribution Network Operators (DNOs)) to consider appropriate opportunities to enable new and accelerated investment through the remainder of the RIIO-ED1 price control. The objective was to support future user needs and help deliver faster progress towards Government decarbonisation targets.

1.7. Subsequently, in February 2021 we published an Open Letter<sup>2</sup> on this latest phase of this Green Recovery programme, covering the third area of focus listed above. This phase of the programme – the DNO Green Recovery Scheme - provides a significant opportunity for the electricity distribution networks to help drive changes in the energy economy and pathways to Net Zero and to maximise the opportunities that will enable a smarter and lower-cost zero-carbon future.

1.8. The Open Letter set out the detail of the main drivers behind the approach and the proposed regulatory arrangements for the DNOs to bring forward low regrets network investment under the RIIO-ED1 price control, which runs until 31 March 2023.

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<sup>1</sup> [RIIO-2 Final Determinations for Transmission and Gas Distribution network companies and the Electricity System Operator | Ofgem](#)

<sup>2</sup> [Open letter on the Energy Network Association Green Recovery Scheme | Ofgem](#)

1.9. The proposed regulatory arrangements include using a combination of existing DNO allowances and new funding where these are expected to be exhausted, to support faster progress towards government decarbonisation targets.

1.10. The regulatory arrangements for the DNO Green Recovery Scheme are separate to the development of the new price controls (RIIO-ED2) starting in April 2023.

## **DNO Option Selection Process**

1.11. The publication of our Open Letter coincided with the opening of a Call for Evidence window arranged by each of the DNOs in collaboration with the Energy Networks Association (ENA). The Call for Evidence window, open from 8<sup>th</sup> February to 19<sup>th</sup> March 2021, allowed the DNOs to engage with key stakeholders, including local authorities, developers and other parties, to identify locations where investments in the networks could be made quickly to support shovel-ready developments that underpin the transition to a net zero carbon emissions economy in line with Government targets.

1.12. Through the call for evidence process, the DNOs made clear that investment proposals would be prioritised based on criteria agreed by Ofgem. These criteria were:

- expected network utilisation, including how much of the additional network capacity was likely to be used in the near term, including evidence of user demand or need
- deliverability, specifically whether the proposals could be delivered in the remaining period of the RIIO-ED1 price control
- value for money, including consideration the cost of a proposal relative to the prospective utilisation (including the potential of the scheme to provide flexibility of other Distribution System Operator (DSO) services) and any wider benefits the scheme may deliver.

1.13. Following a shortlisting process undertaken against these criteria, each of the DNOs submitted a range of investment proposals for our assessment. These investments totalled £366.47m across all DNOs, of which we have accepted £301.3m.

## Next steps

1.14. The DNOs will now work with their stakeholders to deliver the agreed investments under the remainder of the RIIO-ED1 price control period. As identified above, any new funding will be subject to a cap for relevant DNOs which is set equivalent to the agreed value for the proposals that have been approved.

1.15. To facilitate expenditure under the Green Recovery Scheme, we intend to put in place a new licence condition under the RIIO-ED1 controls. This will be subject to a statutory consultation that we intend to launch in late May 2021, which will introduce the new proposed licence condition as well as the related modifications to the Price Control Financial Instruments.

1.16. The following chapters provide detail on our regulatory treatment, a summary of these proposals submitted by the DNOs, and our decisions. Further detail on each of the DNO's programmes is provided in the appendices.

## Your feedback

### General feedback

1.17. We believe that decision document 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](mailto:RIIO-ED1@ofgem.gov.uk)

## 2. Regulatory treatment of Green Recovery expenditure

### Overview

2.1. In our Green Recovery Scheme Open Letter,<sup>3</sup> we proposed that:

- any expenditure incurred under the scheme will be met from existing RIIO-ED1 allowances but that where a DNO is currently forecasting to exceed their RIIO-ED1 allowances in aggregate over the full 8-year price control period to 31 March 2023 new funding will be permitted, subject to an agreed cap and separate regulatory arrangements
- the values of those caps will be set by us following the call for evidence and consideration of commercial submissions when the DNOs notify us of their short-listed proposals. Expenditure exceeding current RIIO-ED1 forecast expenditure up to and including the cap will have the incentive rate set to zero. Any expenditure over the cap will not be subject to this funding mechanism and will therefore continue to have the incentive rate applied under normal RIIO-ED1 provisions
- all proposals must be in line with the agreed principles and criteria, which also provide an obligation on the DNOs to not discriminate between any persons or classes of persons
- actual expenditure incurred will be compensated in line with the agreed funding mechanism if the ex-ante agreement on the scope of liable expenditure and efficiency is followed.

2.2. All costs (including any indirect costs) incurred in respect of the approved investments flow through the funding mechanism and count towards the cap.

2.3. Ofgem will review progress against delivery through updates to the RIIO-ED1 price control reporting arrangements (Regulatory Reporting Packs (RRPs)). Regarding any expenditure incurred, networks must continue to comply with the conditions of their

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<sup>3</sup> [https://www.ofgem.gov.uk/system/files/docs/2021/02/ena\\_green\\_recovery\\_scheme\\_open\\_letter\\_feb\\_21.pdf](https://www.ofgem.gov.uk/system/files/docs/2021/02/ena_green_recovery_scheme_open_letter_feb_21.pdf)

licences, including the conditions that relate to the RIIO-ED1 price control. Networks must also comply with all wider regulatory and statutory obligations. Any costs that we consider to be non-compliant with the scope for the agreed proposals would be treated as if they did not flow through the approved funding mechanism and did not count towards the cap.

## Stakeholder responses

2.4. The Open Letter invited stakeholders to provide comments on the proposed regulatory treatment. Responses were received from Citizens Advice and Centrica.

2.5. Citizens Advice welcomed the objectives of the Scheme and the commitment to accelerating investment that could maximise consumer benefits and enable a smarter and lower-cost zero-carbon future. They also said that the proposed treatment (whereby only actual expenditure incurred will be funded) should negate risks relating to companies being able to retain underspends.

2.6. Regarding the principles set out in the Open Letter, Citizens Advice recommended that Ofgem fully reflect the availability of alternatives to network reinforcement (eg. flexibility services, promotion of energy efficiency) in line with the approach being undertaken for the RIIO-ED2 price control Business Plan assessment. Citizens Advice also recommended further stakeholder engagement beyond the ENA and DNO led Call for Evidence process to confirm that the proposed investments are low regrets.

2.7. Centrica welcomed the Scheme being developed and the networks being encouraged to bring forward targeted measures to deliver earlier benefits to consumers while supporting progress to net zero targets. They said that the proposed regulatory treatment “relieves companies of bearing some expenditure risk and transfers that risk entirely to consumers” and that “an unintended consequence of this proposal is that it could reduce the incentive on companies to be efficient that would otherwise apply during the RIIO-ED2 price control or outside the Scheme during the RIIO-ED1 price control”. They recommended that we use a “price control deliverable” approach, as has been put in place in the RIIO-GD2 and T2 price controls. They say this will enable companies to be better held accountable for delivery.

2.8. Centrica encouraged Ofgem to ensure long-term value to consumers by ensuring any assessment of benefits included the cost of financing and the value provided by flexibility alternatives, ensuring that a robust efficiency assessment of any proposals is undertaken, ensuring the DNOs do not use any new funding provided to meet RIIO-ED1

obligations, and by addressing any risk of distortion or benchmarking for the RIIO-ED2 price control setting process.

## **Our assessment**

2.9. A key objective of the Scheme was to enable the fastest possible ramp-up of relevant expenditure and to enable low-regret, Net Zero related investment to be accelerated to support a green recovery. We are content that most of the proposals the DNOs have submitted through the Scheme, as well as the processes they have applied to identify appropriate proposals, will help to facilitate that objective.

2.10. The DNOs have each engaged in an open call for evidence process with their local stakeholders. This process, applied broadly consistently across each of the DNOs, allowed a long list of potential investment options to be prioritised based on key criteria including value for money for consumers, deliverability over the remaining RIIO-ED1 period and expected near-term asset utilisation.

2.11. We have scrutinised the proposals submitted and have not allowed those where we have concerns over value for money, risk or deliverability to proceed under the Green Recovery Scheme. We also note that in many instances, expenditure will be met from existing RIIO-ED1 allowances given the DNOs current and projected financial performance (ie. they are currently forecasting to underspend against their allowances). Accordingly, formal approval from Ofgem is not strictly required. Where new allowances were required, we have interrogated the extent to which options, including flexibility alternatives, had been considered and the efficiency of costs for the proposed solution.

2.12. In our view, the arrangement that was proposed in the Open Letter is the most appropriate method for funding Green Recovery expenditure. It will ensure that additional funding is only made available where existing RIIO-ED1 allowances are expected to be spent in full. Though the disapplication of the totex incentive mechanism (TIM) means that those DNOs that are currently forecasting to spend their allowances in full will not bear any share of the Green Recovery costs (and these will instead be funded by customers), DNOs will still need to ensure that expenditure does not exceed the allowed cap and therefore an incentive to deliver work efficiently remains. The TIM will continue to apply to any expenditure above this level.

2.13. In this context, we are satisfied that we have followed an appropriate process that balances the need to enable DNOs to begin work on accepted Green Recovery proposals as soon as possible and the need to ensure that only appropriate expenditure is allowed.

2.14. We will work with the DNOs to agree reporting arrangements which clearly identify Green Recovery expenditure for the remainder of the RIIO-ED1 price control period and help to avoid any distortion of the price control setting process for RIIO-ED2.

### 3. Our approach to assessing the DNO proposals

#### Summary

3.1. In total, the DNOs submitted 210 proposals for assessment, with a total investment value of £366.47m. Following our assessment process, the number of proposals accepted for delivery is 205 (including proposals accepted but scope reduced). The total estimated investment value of the accepted proposals is £301.3m, with £126.78m coming from existing network company allowances, and £174.52m being made available through new allowances.

3.2. The value of new allowances awarded is equivalent to 0.7% of total network company allowances over the 8-year RIIO-ED1 period.

3.3. The full list of submitted and accepted proposals and corresponding investment values by DNO is summarised in the following table.

**Table 2: Summary of Green Recovery Decisions by DNO**

<b>Distribution Network Operator (DNO)</b>	<b>Number of proposals submitted</b>	<b>Value of submitted proposals (£m)</b>	<b>Number of proposals accepted</b>	<b>Value of proposals accepted (£m)</b>	<b>Existing or new allowances (based on current forecasts)</b>
ENWL	11	20.28	11	20.28	Existing
NPg	14	75.1	14	53.1	New
SPEN	44	89.37	40	61.7	New
SSEN	12	40.92	12	40.92	New
UKPN	90	82.4	88	66.1	Existing
WPD	40	58.4	40	59.1	Combined
<b>Total</b>	<b>211</b>	<b>366.47</b>	<b>205</b>	<b>301.3</b>	<b>42% existing allowances, 58% new.</b>

#### Approach to assessment

##### Engineering justification

3.4. As part of their Green Recovery Scheme submissions, network companies were required to complete a common template which set out the need, options, scope, costs and benefits for projects or aggregated investment programmes.

3.5. In assessing the proposals, we considered the needs case for the investment. This is demonstrated by the provision of an explanatory narrative, including the rationale for investments, supporting data (including system loading and constraints details) and the support from stakeholders.

3.6. We reviewed the options development process and the efficiency of engineering solutions to determine if a chosen/preferred option is a proportionate solution to the identified needs case. This included an assessment to ensure the scope of the solution has not expanded beyond meeting the identified need without further justification.

3.7. We studied the investment delivery timings and volumes to determine if the proposed solution can be delivered in the Green Recovery Scheme timescales and that all associated delivery risks (such as land purchase risk or any implications for wider networks) can be managed via standard industry processes.

### **Cost assessment**

3.8. We reviewed the costs for the submitted proposals and aggregated investment programmes, including comparisons against reasonable alternatives (including flexibility). Our cost assessment approach included unit cost analysis and comparative benchmarking using industry averages and historical data (including the current RIIO-ED1 price control and the previous Distribution Price Control Review 5 (DPCR5), which covered the period 2010 to 2015).

3.9. Due to the bespoke nature of many of the submitted proposals and investment programmes, our cost assessment approach also included scheme by scheme expert technical review.

3.10. As noted in Section 2, we will work with the DNOs in the development of the Regulatory Reporting Packs (RRPs) to agree appropriate reporting arrangements for the remainder of the RIIO-ED1 price control period, clearly identifying Green Recovery Scheme expenditure. The purpose of this is to ensure we capture spend and outputs associated with Green recovery, understand performance and efficiencies in delivery and avoid any distortion of the price control setting process for RIIO-ED2.

## **EV Charging at Motorway Service Areas (MSAs)**

3.11. The UK Government's 10-point plan for a Green Industrial Revolution,<sup>4</sup> published in November 2020, set out the steps they are taking to support the electrification of most surface transport, including ending the sale of new combustion engine vehicles by 2030. In their Climate Change Plan Update,<sup>5</sup> published in December 2020, the Scottish Government confirmed that their target to phase out the need for petrol and diesel cars in vans would be brought forward to 2030 in line with the Committee on Climate Change recommendation in its 2020 Progress Report for Scotland.<sup>6</sup>

3.12. The acceleration of Government targets for transport will create more demand for electricity. This necessitates an accelerated roll out of charging infrastructure, particularly around the delivery of rapid charge points across the motorway and strategic road network and key transit hubs.

3.13. Reflecting the increased certainty around the transport decarbonisation pathways, around 40% of the investment proposals submitted by the DNOs relate to increased network capacity to facilitate the deployment of rapid charging infrastructure across motorway services areas (MSAs). Given UK Government commitments around MSAs made through Project Rapid<sup>7</sup> we have worked closely with the Office for Zero Emissions Vehicles (OZEV) to assess these proposals. This includes assessments in relation to their target to have at least 6 high powered, open access chargepoints at MSAs in England by 2023.

3.14. Through their Green Recovery submissions, the DNOs proposed to undertake strategic network investment to support 40 MSAs and 2 trunk road locations across England and Wales, with additional sites across key motorway and transit hubs in Scotland. Except for 3 proposals that will be subject to phased delivery or further development works to consider alternative transmission solutions, all other MSA investment proposals have been accepted.

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<sup>4</sup> [The ten point plan for a green industrial revolution - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/consultations/the-ten-point-plan-for-a-green-industrial-revolution)

<sup>5</sup> [Securing a green recovery on a path to net zero: climate change plan 2018–2032 - update - gov.scot \(www.gov.scot\)](https://www.gov.scot/publications/secure-green-recovery-on-a-path-to-net-zero-climate-change-plan-2018-2032-update/pages/20)

<sup>6</sup> [Reducing emissions in Scotland – 2020 Progress Report to Parliament - Climate Change Committee \(theccc.org.uk\)](https://www.theccc.org.uk/2020/12/02/reducing-emissions-in-scotland-2020-progress-report-to-parliament/)

<sup>7</sup> [Government vision for the rapid chargepoint network in England - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/consultations/government-vision-for-the-rapid-chargepoint-network-in-england)

3.15. We expect the delivery of these network investments will enable the market to install around 1800 ultra-rapid charge points across these motorway and trunk road locations, potentially supporting over 6 million daily vehicle journeys over time.

3.16. These investments cover around one third of the MSA network in England and Wales. Further development of options to ensure appropriate network capacity, covering both distribution and transmission solutions, will be considered in the context of wider network planning and the relevant Government programmes, including the UK Government Project Rapid. This process will help to ensure the electricity networks can fully support government’s ambitions to prepare the way for 100% uptake of zero emissions vehicles ahead of need.

## Appendices

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## Appendix 1 ENWL Investment Proposals

### Section summary

ENWL submitted 11 proposals at a total investment value of £20.28m. We have approved all proposals together with the total investment value which will be funded through ENWL's existing RIIO-ED1 allowances.

### Summary of proposals

A1.1 ENWL's submission categorised their proposals under two themes – decarbonisation enablers and infrastructure development enablers. Additional information on the individual proposals is provided below.

A1.2 ENWL identified that the submitted proposals were prioritised to ensure that investments in capacity were fully co-ordinated with other existing network development plans through the remainder of the RIIO-ED1 period, and maintain potential future options to deliver wider customer benefits, by improving network resilience and efficient network development.

### Decarbonisation enablers

A1.3 Key decarbonisation proposals are summarised as follows:

- **North Carlisle area strategic reinforcement (£1.4m):** delivery of 8km 11kV circuit with associated new switchgear to resolve network constraints to permit the connection of more low carbon technology (LCT) connections, including EV charging at Todhills Services MSA, and provide an interconnection between different parts of the local network to increase resilience for existing customers.
- **Lancaster Forton area strategic reinforcement (£0.54m):** delivery of 5km 11kV circuit to increase capacity for proposed developments of low carbon technology connections, including EV charging stations at the key M6 Lancaster MSA. Future proofing of investment to facilitate the future upgrade and provide a more enduring solution for accommodating future demand increases.

- **Heywood Birch area strategic reinforcement (£0.7m):** laying 2 x 4km cables to increase network capacity and help facilitate new connections, including EV charging at Birch MSA and future low carbon technologies around Birch Business Park.
- **LV Network monitoring programme (£8.6m):** investment to install LV monitoring devices at 3531 of the most populous ground mounted substations, covering over 1 million customers. Investment considered to enhance network monitoring and utilisation of circuit capacity, facilitating lower cost, quicker connections and increasing opportunities for flexibility markets.
- **Greater Manchester electric heating enabler (£2.5m):** investment to support programme of reinforcement work and service unlooping to accommodate this additional LCT connections arising from GMCA 2038 net zero targets, including installation of heat pumps into social housing estates and high occupancy residential buildings.
- **Network reinforcement for EV charging hubs and on-street parking (£0.5m):** network reinforcement fund to support the connection of EV charging hubs at major A-roads and public locations.
- **Windermere lakeside strategic reinforcement (£0.7m):** investment in local 11kV work to enhance the network capacity in the Windermere lakeside area, supporting enhanced EV charging facilities at major tourist sites and planned decarbonisation of ferry services.
- **Service unlooping programme (£2.5m, various locations):** replacement of looped services that are expected to supply increased LCT demand to remove network capacity constraints.

### Infrastructure development enablers

A1.4 Key infrastructure development proposals are summarised as follows:

- **Carlisle-Morton strategic reinforcement (£1.9m):** replacement of overhead lines to uprate the circuit and increase capacity for planned housing, economic development, transport and community investments at St Cuthberts.

- **Godley Green Garden Village high density LCT monitoring project (£0.16m):** installation of enhanced network monitoring technologies to support more efficient connection of high density LCTs in the first phase of development plans.
- **Ancoats and Eastlands (£0.78m):** investment in 6.6kV cable from the expanded Eastlands primary substation towards New Islington to increase network capacity for local economic development plans.

## **Ofgem assessment**

A1.5 All proposals have been agreed.

A1.6 We have reviewed the submission from ENWL covering the 11 proposals with an investment value of £20.28m. We consider that each of the ENWL proposals meets the objectives and requirements of the Green Recovery Scheme (as set out in Chapters 1 and 2 of this document) and our review of the engineering justification and costs has not identified any concerns. All proposals have been approved and will be funded through ENWL's existing RIIO-ED1 allowances.

## Appendix 2 NPg Investment Proposals

### Section summary

NPg submitted 14 proposals at a total investment value of £75.1m across both their licence areas. While all proposals have been approved, the delivery of one project will be phased across the RIIO-ED1 and ED2 price controls to better manage uncertainties and increase efficiency. Accordingly, £53.1m of investment has been approved for RIIO-ED1. Given that NPg is currently forecasting to exhaust its RIIO-ED1 allowances, these projects would be funded through new allowances.

### Summary of proposals

A2.1 NPg's shortlisting process identified 14 projects that are expected to deliver benefits that will facilitate both national and regional decarbonisation and economic growth. This includes supporting the objectives of the UK Government's Project Rapid and the roll out of EV charging infrastructure. Several of the proposals shortlisted would involve enabling works for the likely future demand of EVs across the NPg region's strategic road network. Some of the other proposals are expected to support wider decarbonisation, including hydrogen production via electrolysis and significant solar renewable generation, and broader regional economic development.

A2.2 Additional information on the individual proposals are provided below.

#### EV related proposals (MSAs and strategic road network)

3.17. NPg has prioritised several EV related capacity projects, including MSAs and increases in capacity for charging infrastructure across the wider strategic road network:

- **Local service station upgrades (various locations, £0.6m):** investment in additional network capacity to target future demand projections at local service stations that are currently out of the scope of the UK Government's Project Rapid but critical to the strategic road network of Yorkshire and the North East.
- **Durham junction (£3m):** new substation to create additional capacity for demand and generation. The project specifically targets the future demand projections of Project Rapid for the local MSA.

- **Scotch Corner junction (£6.5m):** replacement of Darlington North 33kV switchboard to enable a future substation at Scotch Corner. Switchboard replacement seen as a key enabler for future development at the Scotch Corner junction and to provide fault level headroom for distributed generation in the North Yorkshire region.
- **Washington junction (£1.3m):** new substation to create additional capacity for demand and generation. The project specifically targets the future demand projections of Project Rapid for the local MSA.
- **Woodhall junction (£7.3m):** investment to support new 66kV feeders energised at HV level to create additional capacity for demand and generation. Proposal considered to deliver a scalable connection for the MSA with the highest projected demand requirements from Project Rapid in the NPg region. Investment will enable the full future demand to be realised later. NPg expect additional asset utilisation to be achieved via large scale distributed generation operators.
- **Wetherby junction (£27.0m):** investment to support ~30MVA to the MSA and help to unlock a significant amount of renewable generation and development potential in Wetherby alongside providing a range of other system synergies.

### Other proposals

A2.3 NPg submitted several other proposals covering EV charging (including electric bus transport), heat decarbonisation, hydrogen production, solar DG, resilience, regional regeneration and economic development, and strategic capacity at port locations.

- **Net Zero ready substation programme (£3.0m, various locations):** investment in enhanced network monitoring capabilities to support the energy transition and our future vision for a net-zero ready substation.
- **Doughty Road Primary Substation, Grimsby (£0.2m):** investment to install higher capacity cables to create additional demand and generation capacity, releasing capacity for the port. The scheme is considered to mitigate existing network constraint to releasing full transformer capacity, supporting the development the Freeport and local economic development.

- **Epworth Primary Substation, Doncaster (£8.2m):** investment to deliver a second feeder and transformer to the substation to create additional capacity for demand and generation. NPg stakeholder engagement and network planning suggest a significant growth in demand and economic activity in the region. New capacity will provide security of supply improvement for existing customers and release significant capacity for future development.
- **Netherlands Way Supply Point, Immingham (£3.5m):** investment to add a second circuit to the proposed generation supply point to create additional capacity for demand. The enhanced connection scheme expected to release 120MVA of demand capacity for economic growth in the region and additional security of supply for nearby generation.
- **Seaham Primary Substation (£8.5m):** investment to deliver a new primary substation to create additional capacity for demand and generation. The project is designed to support both the economic development of the region and targeted decarbonisation plans which have been produced in conjunction with the Coal Authorities plans for the regeneration of the local Dawdon colliery.
- **Harrogate 11kV upgrades (£1.5m):** investment to support upgrade of the 11kV network to create additional capacity for demand and generation. Project is an acceleration of planned RIIO-ED2 work to remove forecast constraints affecting Harrogate town centre, supporting future demand growth through local development and rollout of low carbon technologies.
- **Newcastle City Centre (£3.0m):** investment to support a suite of projects across the city centre to increase network capacity and support decarbonisation of heat, transport, and low carbon generation.
- **York (£1.5m):** investments to support city's Net Zero ambitions. This scheme proposes to support the local authority's decarbonisation plans by providing additional capacity to the city centre for EV charging and additional network resilience (flooding defences).

## Ofgem assessment

- A2.4 We have reviewed the submission from NPG covering the 14 proposals with an investment value of £75.1m. We consider that 13 of NPG's proposals meet the objectives and requirements of the Green Recovery Scheme (as set out in Chapters 1 and 2 of this document) and our review of the engineering justification and costs has not identified any concerns. For the remaining proposal, Wetherby junction (£27.0m), we consider that the design maturity of Phase 2 of the project is too low at this stage to be funded via the Green Recovery Scheme.
- A2.5 NPg highlight in their submission that the proposed investment at Wetherby junction is based on preliminary high-level feasibility studies and that detailed analysis is still required to optimise design, cost, delivery and outputs.
- A2.6 NPg also propose a phased approach to delivery of Wetherby junction. For Phase 1, it is proposed to change the 33kV switchboard at Bramham supply point at a cost of £5m. This would be followed by Phase 2 – the laying of approximately 10km of dual circuit 33kV cable from Braham supply point to the vicinity of Wetherby MSA and the creation of a new primary with a cost of £22m.
- A2.7 In our view and considering the scope of the proposals in Phase 2 which include a new primary substation and a significant cable run, it would be appropriate for a detailed analysis to be completed to optimise the design, cost, delivery and outputs. Therefore, partial funding of £5m for Phase 1 shall be provided and we expect NPg to bring forward Phase 2 as part of their RIIO-ED2 submission following consultation with all relevant parties.
- A2.8 Accordingly, £53.1m of investment has been approved. Given that NPg are currently forecasting to exhaust their RIIO-ED1 allowances, this investment would be funded through new allowances.

## Appendix 3 SPEN Investment Proposals

### Section summary

SPEN submitted 44 proposals across both of their licence areas with a total investment value of £89.37m. Two proposals totalling £24.17m covering the removal of polychlorinated biphenyls (PCBs) have been refused under the Green Recovery Scheme and will be considered separately. A further £3.5m requested for proposals involving investment on domestic Active Network Management (ANM) schemes has been refused given ongoing developments to ensure appropriate enduring governance arrangements to support effective deployment. Accordingly, £61.7m of investment has been approved spanning 40 proposals. Given that SPEN are currently forecasting to exhaust their RIIO-ED1 allowances, these projects would be funded through new allowances.

### Summary of proposals

- A3.1 SPEN shortlisted 42 initial proposals across both of their licence areas with a total expected investment value of £65.2m (19 proposals for SP Distribution at £35.2m, 23 proposals for SP Manweb at £30m).
- A3.2 SPEN have focussed on identifying investment in areas where a lack of local network capacity is restricting development, including the adoption of low carbon technologies. This includes investment to support EV charging (including multiple MSA sites in the SP Manweb licence area), heat pump deployment, connection of increased distributed generation and service unbundling (eg. removal of constraints associated with looped services).
- A3.3 SPEN also submitted two additional proposals (one for each licence area) relating to accelerated delivery of the programme to remove PCBs. While the statutory obligations requiring the testing/replacement of pole mounted transformers for PCB contamination is understood, additional development works will be required across all DNOs to understand the full impact on volumes and unit costs across the remainder of the RIIO-ED1 period and the associated implications for the setting of the RIIO-ED2 control. Accordingly, we do not believe it would be in the best interests of consumers for these proposals to be advanced under the Green Recovery Scheme. We will consider these proposals separately, including consideration of the implications for PCB removal across all DNO licence areas, under the RIIO-ED1 price control process.

A3.4 Additional information on all of SPEN's individual Green Recovery proposals is provided below.

### **SP Distribution Proposals**

A3.5 A summary of each of the proposals submitted for the SPD licence area is provided below:

- **AMIDS District Heating Network (£0.4m):** reinforcement of cabling to enable the connection of an innovative District Heating Network (DHN) project as part of the Advanced Manufacturing Innovation District Scotland (AMIDS).
- **Dunfermline Learning Campus (£5.5m):** investment to support a new primary substation in Dunfermline. The site will be sized at 32MW with this full capacity being released and available.
- **Clackmannanshire EV Charging (£0.45m):** installation of 4 secondary substations and the associated 11kV cabling to support the installation of EV charging infrastructure in Clackmannanshire.
- **Edinburgh EV Charging (£0.19m):** installation of 2 x 1000kVA package substations and associated infrastructure to facilitate the delivery of EV charging facilities at Ingliston (6 x rapid bays for taxi charging along with 30 x slow chargers for general use) and Hermiston Park (20 x slow charging bays for general use) and Ride sites and provide additional capacity for further EV's. The substations will also allow future EV's, battery storage and PV be added in future both by public and private funding.
- **Scottish Borders Housing Association (£0.35m):** investment to support removal of 60 lateral services and replacement with dedicated 100A services. Reinforcement of 350m of mains cables and transfer of 20 services to new mains to accommodate load and voltage rise.
- **Moodiesburn Primary (£4.24m):** investment to establish new 20MVA Primary Substation and associated network infrastructure, central to the anticipated load growth area in the proposed new commercial development.
- **Hamilton Services EV Charging (£0.88m):** increases to network capacity to support EV charging at key transit hub. Includes extension to the existing 11kV

board at Hamilton Primary substation, additional 11kV cable to Furlongs Roundabout substation, and installation of 2 x 11kV cables from Furlongs Roundabout to Clydepark Substation, and upgrade of substation plant at Furlongs Roundabout and Clydepark.

- **Cala Stepps, Gankrik (£0.06m):** interconnection of 11kV network to allow the proposed new Moodiesburn Primary to provide additional capacity to the planned Cala Homes development in Stepps. The project would allow the developer to install more green technology than the network could currently support.
- **Caledonian Bus Depot EV Charging (£6.1m):** investment to establish a new 33/11kV primary substation site, comprising two 32MVA 33/11kV transformers, a 17-panel 11kV switchboard and all ancillary equipment on land that would be made available by First Group plc. The associated 11kV network will provide capacity for additional demand, including electrification of bus services and generation connections directly to this proposed site, as well as releasing capacity at adjacent 33/11kV primary substation sites.
- **Scottish Exhibition Centre, New Primary for COP26, Glasgow (£5.1m):** investment to establish a new 33/11kV primary substation site, comprising two 32MVA 33/11kV transformers, a 15-panel 11kV switchboard and all ancillary equipment, on land that would be made available by SEC. The associated 11kV network will provide capacity for additional demand and generation connections directly to this proposed site, as well as releasing capacity at adjacent 33/11kV primary substation sites.
- **Decarbonisation of Electrical Networks – Wigtown (£0.4m):** investment to support upgrade of 11kV circuits, establish the capacity for EV charging in the town centre and ensure all properties have an individual supply able to take the full 100Amps.
- **Net Zero Housing, Dumfries and Galloway (£1.29m):** investment to ensure the electrical infrastructure is in place to allow retro fit Heat Pumps, Solar PV, Batteries and EV Charging into 100 existing homes and 650 new homes.
- **EV Charging Facilities M74 Corridor, Dumfries and Galloway (£1.13m):** reinforcement of the 11kV networks for Gretna services and Annandale Water motorway service areas and local charging in Lockerbie.

- **Decarbonisation of Heating – Thornhill and Ecclefechan (£0.88m):** investment will pilot mass upgrades to local networks and where heating is provided through off grid solutions in Dumfries and Galloway. 301 Looped Services in the villages of Thornhill and Ecclefechan will be upgraded to 3 phase.
- **Police Scotland EV Charging, various locations (£0.97m):** upgrading of 16 secondary substation transformers during Phase 1 to support electrification of Police Scotland vehicle fleet.
- **Enabling flexibility from DERs: Glenluce (£2.2m):** installation of advanced monitoring equipment, communication infrastructure and resource control technology on the network around Glenluce GSP.
- **Enabling flexibility from DERs: Redhouse (£2.2m):** installation of advanced monitoring equipment, communication infrastructure and resource control technology on the network around Redhouse GSP.
- **Domestic Active Network Management (£1.34m):** development and deployment of a domestic Active Network Management (ANM) scheme to facilitate uptake of heat pumps and EVs.
- **LV Smart Voltage Control, various locations (£0.61m):** investment to support replacement of conventional distribution transformers with voltage regulating distribution transformers (VRDT), or distribution transformers fitted with on-load tap changers (OLTC) at 10 sites. The improved voltage control will release additional network capacity facilitating uptake of Low Carbon Technologies (LCTs).

### SP Manweb Proposals

A3.6 A summary of each of the submitted proposals for the SP Manweb licence area is provided below:

- **Runcorn Station, Liverpool City Region (£0.55m):** installation of two new double 500kVA substations and associated works to support charging at Runcorn Station Quarter. Expected to support further connection of low carbon technologies and support demand from wider area re-generation including new business growth and housing development.

- **LCT Crewe Town (£0.24m):** investment to support a new 500kVA substation and associated network infrastructure to support LCT ambitions in Crewe Town centre.
- **EV charging, Wardle Depot (£0.24m):** upgrading of existing infrastructure to support Cheshire East Borough Council LCT ambitions.
- **Warrington Town Centre Housing (£2.25m):** installation of two new 33/11kV primary substations and laying of 33kV and 11kV connector cables. Designed to support Warrington Borough Council development proposals, supplying EV charging and heat pump capability to 4,070 properties across 65 sites.
- **Cowley Hill Housing St Helens, Liverpool City Region (£1.59m):** installation of a single primary substation and associated interconnection works to local 6.6kV network to support capacity for EV charging and electric heating in new housing developments.
- **Festival Gardens Housing, Liverpool City Region (£3.08m):** installation of a double primary substation and associated cabling works to the 11kV network to facilitate the regeneration of the Liverpool Festival Gardens development.
- **Headbolt Lane New Train Station, Liverpool City Region (£0.39m):** supporting Headbolt train station EV charging aspirations through the upgrading of overhead line and cable circuits to create 2MW of additional network capacity.
- **Bootle Canal Quarter Regeneration, Liverpool City Region (£1.76m):** upgrading of existing 6.6kV network to facilitate Liverpool City Council's aspirations for the Bootle Canal Quarter. Project will deliver enabling works ahead of full delivery in RIIO-ED2 price control period from 2023, creating additional capacity of around 9.5MVA.
- **Tanygrisiau Heat Pump Rollout (£0.2m):** upgrading of existing network through the installation of two new 500kVA substations to support Gwynedd County Council's ambitions for low carbon technologies.
- **EV charging, Llandudno Railway Station (£0.08m):** investment will support Network Rail EV charging commitments by looping in a new 1000kVA transformer to deliver 600kW of EV charging stations at Llandudno Railway Station.

- **Afon Caledffrwyd (£0.03m):** investment to support the installation of community hydro generation project by installing a 200kVA pole mounted transformer.
- **New Housing Denbigh Hospital (£0.19m):** investment to support Welsh Government and Economic Ambition Board LCT ambitions by providing additional headroom via installation of 500kVA substation to create up to 1MW of additional network capacity. Expected to be supplemented with further phased delivery into RIIO-ED2 period.
- **Transport for Wales Car Parking (£0.63m):** provide network infrastructure to allow market to enable EV Charging across railway stations in North and Mid Wales. Project will deliver an initial 200kVA of EV charging points at 8 station locations which have a large concentration of commuter traffic.
- **EV Charging at Strategic Welsh Government Sites (£1.39m):** project will deliver an initial 350kVA of EV charging points at 17 strategic locations along key trunk roads in Wales. The proposed solution for each of the 17 locations would be based on installation of a 11kV Ground Mounted Substation and 11kV cable to loop into the existing network.
- **Birkenhead Town Centre, Liverpool City Region (£1.76m):** Accelerated upgrading of existing 6.6kV network to facilitate Liverpool City Region's LCT aspirations for the Birkenhead Town Centre. Project presented as key enabling works ahead of full delivery in RIIO-ED2, which will release up to 12MW of demand capacity upon full completion.
- **South Wirral Water Heat Pumps, Liverpool City Region (£1.9m):** accelerated upgrading of existing 6.6kV network to facilitate Liverpool City Region's LCT aspirations for the South Wirral Area.
- **Domestic ANM (£2.18m):** development and deployment of a domestic Active Network Management (ANM) scheme to facilitate uptake of heat pumps and EVs

#### **Motorway Service Area (MSA) proposals (SP Manweb)**

A3.7 Several proposals were also submitted to support the deployment of rapid EV charging facilities at the following MSA locations:

- **Phase 1 Tatton New MSA (£0.59m):** installation of new substation to support EV charging requirements at a planned Motorway Service station at Tatton.
- **Poplar MSA, M6 Junction 20 / M56 Junction 9 (£2.44m):** installation and commission of a new 33/11kV double primary substation at the Poplar 2000 Lymm MSA initially supporting the demand for essential EV services.
- **Knutsford MSA, M6 Junction 19 Northbound & Southbound (£2.58m):** installation of new 33/11kV double primary substation site with ancillary equipment. This requires the installation of approximately 2.2km double circuit 33kV underground cable.
- **Sandbach MSA, M6 Junction 17 Northbound & Southbound (£2.05m):** installation of a new 33/11kV double primary substation site, comprising two 33/11kV 10MVA transformers, corresponding 33kV and 11kV switchgear and all ancillary equipment and two 33kV cable circuits.
- **Hapsford MSA, M56 Junction 14 (£1.79m):** installation of a new 33/11kV double primary substation site, comprising two 33/11kV 10MVA transformers, corresponding 33kV and 11kV switchgear and all ancillary equipment. This requires the installation of approximately 0.6km double circuit 33kV underground cable with association equipment.
- **Burtonwood Services MSA, M62 Junction 8 Eastbound (£2.14m):** installation and commission of a new double primary substation at Burtonwood MSA, supporting the demand for essential EV services.

## Ofgem assessment

A3.8 We have reviewed the proposed submission from SPEN. We consider that 40 out of the 44 SPEN proposals meet the objectives and requirements of the Green Recovery Scheme (as set out in Chapters 1 and 2 of this decision document) and our review of the engineering justification and costs has not identified any concerns.

A3.9 SPEN proposed a £3.53m investment in domestic Active Network Management (ANM) schemes to facilitate control of domestic electric heating and electric vehicles, to manage the peak demand on the LV network as an alternative to conventional

reinforcement. (SP Manweb Domestic ANM £2.18 and SP Distribution Domestic Active Network Management £1.34m).

A3.10 As part of our assessment, we requested further detail from SPEN on their approach to stakeholder management and the governance arrangements for customers connected via a domestic ANM system.

A3.11 In response, SPEN provided evidence to show stakeholder support from customers, local authorities and housing associations but did not detail how they would engage and manage the wider stakeholder community such as suppliers and aggregators. With regards to customer governance SPEN proposed flexible connection agreements.

A3.12 In our view, as these domestic ANM schemes are being proposed on an enduring basis rather than part of an innovation trial, stakeholder management and the governance arrangements should be well developed in advance of the deployment of the schemes. SPEN have not been able to demonstrate that these proposals are well supported by stakeholders and suitable enduring governance is in place to support deployment in the green recovery timescales. Therefore, we have decided not to fund domestic ANM schemes as part of the green recovery scheme.

A3.13 Accordingly, £61.7m of investment has been approved. Given that SPEN are currently forecasting to exhaust their RIIO-ED1 allowances, this investment would be funded through new allowances.

## Appendix 4 SSEN Investment Proposals

### Section summary

SSEN submitted 12 proposals at a total investment value of £40.92m across their two distribution licence areas. We have approved all proposals together with the total investment value. Given that SSEN are current forecasting to exhaust their RIIO-ED1 allowances, funding will be provided through new allowances.

### Summary of proposals

A4.1 SSEN shortlisted 12 proposals totalling £40.92m of investment across their two distribution licence areas. As SSEN expect to have exhausted their existing allowances by the end of the RIIO-ED1 period the investments would be funded through new allowances.

A4.2 The shortlisted proposals cover a wide range of areas including forecasted domestic LCT adoption as well as the development of EV charging infrastructure, the reinforcement to a motorway service area, and the deployment of planned electric ferries services. Overall, SSEN expect that the delivery of these proposals will provide an additional 122.38MW of capacity across their network, supporting 48.19MW of demand load from LCTs.

### SHEPD proposals

A4.3 A summary of each of the proposals submitted for the SHEPD licence area is provided below:

- **Dundee, Constable Street (£3m):** investment to support the reinforcement of Constable Street Primary Substation transformers and associated cables will create 12.8MW of additional network capacity. 9.13MW of this new capacity will be used to support general domestic LCT uptake as well as key proposals to promote electric buses within the city and the decarbonisation of the Police Scotland car fleet.
- **Ormlie and Mount Pleasant (£2.8m):** investment to support the reinforcement of the Ormlie and Mount Pleasant transformers and associated infrastructure, facilitating 2MW of additional network capacity. SSEN expect 8.2MW of this new capacity to support growth general domestic LCT uptake as well as the

decarbonisation of the Police Scotland car fleet, the introduction of EV charging at the RSPB's Dunnet Head Nature Reserve and the rollout of an EV charging hub in Thurso.

- **Kirkwall and St Marys (£2.68m):** investment to enable the reinforcement of the 11kV OHL between Kirkwall and St Marys, releasing 7.3MW headroom at Kirkwall Primary to the wider network. As well as general domestic LCT uptake in the area, this capacity will be utilised by Highlands and Island Airports as part of their Project SATE (Sustainable Aviation Test Environment) to create a low-carbon aviation test environment at Kirkwall Airport.
- **Clachan – North Uist/Benbecula (£2m):** reinforcement of Clachan Substation transformers to create 6.31MW of additional network capacity. SSEN expect the new capacity will be used to support general domestic LCT uptake as well as the electrification of small 'loch class' vessels serving the Clyde and Hebrides Ferry Services by Caledonian Maritime Assets Ltd and the EV charging development scheme initiated by North Uist Development Company.
- **Load Managed Areas (£3m):** investment will focus on Load Managed Areas (LMA) in the licence area. SSEN will establish a standard marker and load profile for LMA customers within their existing LV analytic tool to model space and water heating demand on the network allowing to help better understand customer behaviour and the impact on peak demand when load management is removed. The model will then be calibrated through data collected from LV monitoring across Constable Street and Ormlie Primary network areas. This project will then focus on undertaking LV and HV intervention in these areas with the objective to remove up to 1,900 customers from the existing constraints in place within the LMAs.

### SEPD proposals

A4.4 A summary of each of the proposals submitted for the SEPD licence area is provided below:

- **Wheatley (£3.9m):** investment to enable the reinforcement of the Wheatley transformers and OHL between Wheatley, Headington and Cowley, providing 14MW of additional capacity. 8.58MW of this capacity will support general domestic LCT uptake in the area as well as the significant growth in EV charging requirements at the Oxford motorway service area.

- **Witney Town (£3.1m):** investment to support the reinforcement of the Witney Town transformers, providing 14.2MW of additional capacity. SSEN expect growth to be predominantly driven by greater penetration of low carbon transport initiatives.
- **Dorchester Town (£2.26m):** reinforcement of the feeder cables at Dorchester Town to release 12.47MVA of capacity onto the local network. Additional capacity expected to support predicted LCT growth as well as enabling Dorset Council’s EV charging network programme rollout.
- **Bishops Waltham (£2.98m):** reinforcement of the transformers and the upgrade of the constrained sections of the feeder circuits at Bishops Waltham to provide 5.56MW of additional capacity. SSEN expect 3.09 MW of this capacity to support LCT uptake and expansion in the local area.
- **North Baddesley (£3.6m):** reinforcement of the transformers and the upgrade of the feeder circuits at North Baddesley to provide 5.6 MW (transformer) 12.8 MW (circuits) of capacity. SSEN expect this capacity will support the LCT uptake in the area, primarily the development of the EV charging network and the upgrade of existing EV charging facilities.
- **Rownhams - North Southampton (£9.6m):** reinforcement of Rownhams substation and the installation of two 33kV new cables from Rownhams substation to a new substation at Rownhams MSA, creating 30MW of additional capacity. SSEN believe that scheme proposes a long-term, whole system optimised solution at both the north and south sides of Rownhams MSA.

### **LV monitoring**

A4.5 SSEN submitted a joint project covering LV monitoring across both licence areas. The proposed £2m investment will support the deployment of new monitoring equipment to help better understand existing network capacity and expected trends on demand and power flows on the low voltage networks.

## **Ofgem assessment**

A4.6 We have reviewed each of the 12 proposals submitted by SSEN with a total investment value of £40.92m. We consider that each of SSEN's proposals meet the objectives and requirements of the Green Recovery Scheme (as set out in Chapters 1 and 2 of this decision document) and our review of the engineering justification and costs has not identified any concerns.

A4.7 Accordingly, we have decided to approve all 12 proposals together with the total £40.92m of investment requested. Given that SSEN are current forecasting to exhaust their RIIO-ED1 allowances, funding will be provided through new allowances.

## Appendix 5 UKPN Investment Proposals

### Section summary

UKPN submitted 90 proposals at a total investment value of £82.4m across their three distribution licence areas. We have decided to accept 88 of these proposals at a total investment value of £66.1m which will be funded through UKPN's existing RIIO-ED1 allowances.

### Summary of proposals

A5.1 UKPN submitted 90 proposals (grouped under two main investment themes – MSAs and other low carbon technology enablers) following the shortlisting process, with investment totalling up to £82.4m to be funded through existing RIIO-ED1 allowances across their licence areas. UKPN estimate that the 90 proposals translated to over 200MW of additional network capacity.

A5.2 UKPN identified that the proposed investments would be made through 2021 and 2022 to ensure proposals can be delivered in short timescales and bring benefits to the wider economy. Additional detail on the proposals is summarised below.

#### EV charging at Motorway Service Areas (MSAs)

A5.3 UKPN shortlisted investment at 13 motorway MSA sites, with the aim of facilitating the UK Government commitment to deliver 6 rapid chargers at all motorway service areas in England by 2023. In total, UKPN forecast that these investments would help provide charging infrastructure for over 1.7 million daily car journeys if delivered in full.

A5.4 Additionally, the proposed MSA investment is expected to enable further growth of low carbon generation in rural locations by provision of 11kV network in areas where little capacity has previously been in place.

A5.5 The 13 proposed investments were divided into three core categories:

- **Category 1 (7 sites proposed for immediate delivery):** investment of £20.9m to deliver 56MVA of capacity, equivalent to 750 ultra-rapid chargers, providing 100

miles of range within 10 mins of charge. All proposed circuits would be installed in 33kV construction and connected at 11kV in the short term to provide optionality for greater capacity in the future as required (post 2030). The sites covered include Baldock, Peterborough, London Gateway, Thurrock, Cobham, Pease Pottage and Cambridge.

- **Category 2 (3 sites):** investment of an additional £20.9m (at higher unit cost) to deliver 48MVA of capacity, equivalent to 640 ultra-rapid chargers within RIIO-ED1. Installation of all circuits in 33kV construction and to connect at 11kV in the short-term as per Category 1. The three sites covered Toddington, South Mimms and Medway.
- **Category 3 (3 sites)** – investment of £23m to deliver 24 MVA of capacity, equivalent to 320 ultra-rapid chargers at 3 additional sites – Birchanger, Clackett Lane and Maidstone. These additional sites were identified as options that UKPN could progress under Green Recovery dependent on an Ofgem review of whole system value, including transmission alternatives. Alternatively, UKPN identified that the proposals could be delivered under the RIIO-ED2 price control starting in 2023 and subject to the standard determination process for these controls.

### **Other low carbon technology enablers**

A5.6 UKPN also proposed an additional £17.4m investment across 66 sites to support a range of EV charging infrastructure and local authority and community energy heat and wider decarbonisation proposals (including £0.3m across 5 sites to support heat pump deployment and decarbonisation of generation – Campus East Welwyn Garden City, Campus West Welwyn Garden City, Maidstone District Energy Network, the Observer Building, Hastings and Solar Array, Sheringham Leisure Centre).

A5.7 UKPN expect that the proposed investment for vehicle charging infrastructure would support more than 250 additional ultra-rapid chargers and 1,500 rapid chargers available for public use. This would represent an increase of approximately 15% on the total number of chargers currently available to the public across the UK.

Coverage includes:

- £4.1m investment to support charging at 16 Fuel Stations at locations including Peterborough, Norfolk, Essex, and Kent, providing 18.3MVA of capacity, equivalent to 250 x 150kW ultra rapid chargers

- £2m investment to support 20 Local Authority charging hubs, providing 16.7 MVA of capacity, equivalent to 650 x 50kW rapid chargers. These 20 LA Charging hubs will provide provision of charging in a range of areas including Twickenham, Welwyn Garden City, Suffolk, and North Hertfordshire
- £3.9m investment for 7 Bus Garages, providing 27.0 MVA of capacity, equivalent to 350 x 150kW ultra rapid chargers. These will enable the further rollout of Electric Busses by Transport for London within the Greater London area
- £7.2m investment at 19 further charging hubs, providing 29.7 MVA of capacity, equivalent to 1,200 x 50kW rapid chargers at a range of locations, including railway stations and other car parks. These 19 charging further hubs cover Cambridgeshire, Essex, Guildford, East Sussex, and several boroughs within Greater London.

## **Ofgem assessment**

A5.8 We have reviewed the proposed £17.4m investment in low carbon technological enablers across 66 sites. We consider that each of the UKPN low carbon technological enabler proposals meet the objectives and requirements of the Green Recovery Scheme (as set out in Chapters 1 and 2 of this decision document). Our review of the engineering justification and costs has not identified any concerns. For those reasons, we have decided to approve the total proposed investment in low carbon technological enablers.

A5.9 For the MSA sites, UKPN proposed 7 Category 1 MSA proposals for immediate delivery (Baldock, Peterborough, London Gateway, Thurrock, Cobham, Pease Pottage and Cambridge). We consider that each of the Category 1 UKPN proposals meets the objectives and requirements of the Green Recovery Scheme and our review of the engineering justification and costs has not identified any concerns. We have decided to approve all the Category 1 proposals at a total value of £20.9m.

A5.10 UKPN proposed 3 Category 2 MSA proposals with higher unit cost (Toddington, South Mimms and Medway). For these sites we requested further information on the cost components. UKPN provided that information and having considered it we are satisfied that there is sufficient evidence to justify the expected costs. Our review of the engineering justification and costs for all Category 2 proposals has not identified any concerns. Accordingly, we consider that each of the Category 2 UKPN proposals

meets the objectives and requirements of the Green Recovery Scheme and have decided to approve all Category 2 proposals at a total value of £20.9m.

A5.11 Finally, UKPN proposed 3 Category 3 MSA proposals where they indicated there may be potential for a distribution or a transmission solution (Birchanger, Clackett Lane and Maidstone). In their submission UKPN proposed that an assessment against transmission alternatives be considered to ensure best value for consumers.

A5.12 As part of our review of the Category 3 MSA proposals, we engaged with National Grid Electricity Transmission (NGET) to consider the potential for alternative transmission solutions. This allowed us to consider several criteria including deliverability, cost and value for money. Based on the information available, and the need to ensure that any Green Recovery MSA proposal is likely to enable the most efficient, enduring solution, we have identified that there may be potential for an alternative transmission based solution for Clackett Lane and Maidstone. Accordingly, we are not approving funding under the Green Recovery Scheme for these proposals.

A5.13 We therefore propose that UKPN coordinate with NGET to engage in further development work on the MSA connection for Clackett Lane and Maidstone. This development work would include a whole system assessment of available distribution and transmission solutions, with any outcomes brought forward via the RIIO-ED2 price control setting process where it is appropriate to do so. Any alternative transmission solutions could also be developed in accordance with their own regulatory settlements and any wider UK Government funding.

A5.14 We consider for Birchanger MSA the UKPN proposals meets the intent and requirements of the Green Recovery Scheme and our review of the engineering justification and costs has not identified any concerns. We have approved funding for this proposal, at a value of £6.9m.

A5.15 Combining the low carbon technological enablers and proposed MSA proposals, 88 of UKPN proposals have been accepted at a total investment value of 66.1m. All the approved proposals will be funded through UKPN's existing RIIO-ED1 allowances.

## Appendix 6 WPD Investment Proposals

### Section summary

WPD submitted 40 proposals at a total investment value of £59.1m across their four distribution licence areas. All proposals and the total investment value have been approved and will be funded through a combination of £41.1m from their existing RIIO-ED1 allowances across their East Midlands, South Wales and South West licence areas and £18.0m of new allowances for their West Midlands licence area.

### Summary of proposals

- A6.1 WPD submitted 39 investment proposals across their four licence areas. The total submitted value of the proposals was £58.4m which would be funded through a combination of £41.1m from their existing RIIO-ED1 allowances across their East Midlands, South Wales and South West licence areas and £18.0m of new allowances for their West Midlands licence area based on updated expenditure forecasts for the RIIO-ED1 period.
- A6.2 WPD expect delivery of the proposals to increase demand capacity by 617MW, equating to the equivalent of a diversified requirement for ~171,000 heat pumps or 385,000 standard EV charge points. They also expect 589MW of generation capacity to be added, benefitting a range of potential DG connections. Wider benefits are also expected in relation to network resilience, increased capacity for off-gas grid areas, support for vulnerable customers, and increased EV charging capacity in key tourist areas.
- A6.3 WPD's submission was split into individual and grouped proposals, with proposals ranging in value from £30k to £5.6m. Additional details on the proposals are provided below.

### Individual Proposals

- A6.4 The types of individual proposals include: primary and BSP Transformer upgrades, new or extended Primary/BSP substations, circuit reinforcement at 33kV and 132kV (cable or reconductoring), additional circuits / interconnectors, network extensions (towards MSAs and benefitting surrounding areas) and switchboard replacements or

extensions to facilitate more feeders. Further details on these individual proposals are provided below:

- **New East Croft Primary, East Midlands Nottingham (£3.5m):** construction of new primary substation with 24 MVA capacity.
- **Sleaford Tee –Sleaford re-string, East Midlands (£2.1m):** re-stringing of around 7km of 132kV double circuit overhead lines. WPD expect this to release 16MW of reverse power capacity to facilitate projected growth in generation connections and decrease the amount of reinforcement requirements triggered by customers. A higher rating on the overhead lines will also facilitate Active Network Management capacity as well as increasing demand capacity.
- **Crwys Road and Northcote Street 1 & 2 33kV Circuits, South Wales (£0.9m):** installation of two new 33kV feeder circuit breakers at Cardiff East BSP substation and laying of two 1.5km 33kV underground cables to provide a dedicated 33kV circuit to each 33/11kV transformer at the Crwys Road & Northcote Street primary substations. Expected to support an additional 8MW of demand and 8MW of generation capacity.
- **Golden Hill – West Farm – Neyland Circuit upgrade, South Wales (£0.15m):** survey and upgrade of existing conductors to run at 75 degree centigrade operation. Expected to facilitate the release of 5MW of demand and 6MW of generation capacity.
- **Hirwaun to Aberdare No1 33kV Circuit, South Wales (£0.075m):** survey and re-profile 4.8km of 0.1 HDC overhead line on the Hirwaun to Aberdare No 1 33kV circuit to run at 75 degree centigrade operation in order to increase the thermal rating of the 33kV ring. Expected to facilitate the release of 5MW of demand and generation capacity.
- **Newhouse T2, South Wales (£0.7m):** installation of second 33/11kV transformer at Newhouse Primary Substation to increase the demand capacity and associated works. Expected to release 7MW of demand and 7MW of generation capacity.
- **Neyland – Steynton Circuit upgrade, South Wales (£0.2m):** investment to support the removal of existing remaining network restrictions in the area, complementing planned reinforcement work underway. Focus is on rating of the

overhead line sections to provide additional capacity for both generation and demand proposals. WPD expect project to release 9MW of demand and 6MW of generation capacity.

- **Talbot Green 11kV Board Change, South Wales (£0.7m):** replacement of the existing 11kV indoor circuit breaker arrangement with smaller units, allowing for more breakers and therefore more generator connections. Expected to support additional 14MW of demand and generation capacity.
- **Exeter Main to Ottery St Mary, South West (£1.0m):** for both circuits the scheme will overlay the short cable sections and uprate the overhead line to 75 degree centigrade operating temperature. Expected to support release of 9MW of capacity to facilitate connection of further renewable generation and demand on the surrounding primaries.
- **Indian Queens – Fraddon, A-line, South West (£0.5m):** re-stringing of 4km of 132kV 175 ACSR conductor to increase the capacity available for renewable generation in the area and future proof the circuit, facilitating additional capacity of 57 MW.
- **Load Binding DOC Relay Upgrade, South West (£0.03m):** upgrade the protection relays to load binding DOC relays to increase the reverse power flow capability of local areas of demand.
- **Newquay Trencreek, South West (£2.0m):** replacing existing 60 MVA GTs with 60/90 MVA units with associated infrastructure works. Expected to release an additional 30MW of capacity (demand and generation)
- **Truro GT upgrades, South West (£2.0m):** installation of a new 2.5km 33kV circuit from Newquay Trevemper, alongside a second primary transformer and all necessary 33/11kV switchgear, cables and associated ancillaries. Expected to release 13.5MW (winter demand) and 3MW of additional generation capacity.
- **Victoria Primary, South West (£2.5m):** investment to deliver a new Primary Substation (Victoria) south of the A30 between Cornwall Services and Victoria Business Park with associated infrastructure upgrades. The new substation and associated transformers will release up to 23MVA of demand capacity, facilitating the connection of further renewable generation (up to 12MVA).

- **Bushbury - Stafford 132kV OHL, West Midlands (£2.0m):** removal of constraints to rating of existing circuit by replacing with a larger conductor. The rating of the circuit would be increased from 99 MVA to 145 MVA summer rating. Project expected to release 46MW of demand and 46MW of generation capacity.
- **Bushbury – Wolverhampton West 33kV OHL, West Midlands (£0.3m):** replacing existing lines with 200 AAAC, releasing 14MW of additional demand and 14MW of generation capacity.
- **Stafford Northbound, West Midlands (£2.0m):** installation of two 11kV circuits with associated infrastructure upgrades, releasing 8MW of additional demand and 6MW of additional generation capacity.

### Grouped Proposals

A6.5 Grouped proposals in each WPD licence area include those for 11kV circuit reinforcement of existing networks and the establishment of upgraded or new HV/LV local distribution substations for LCT connections. There were 40 proposals grouped in this way, with 25 of these coming directly from the call for evidence process. Further details are provided below:

- **HV Feeder Reinforcement, East Midlands, various sites (£2.3m):** smaller sections of HV cables to be overlaid or new HV feeders established to increase capacity.
- **HV/LV substation reinforcement, East Midlands (£0.28m):** transformer sizes in existing locations to be increased or new HV/LV substations established to increase capacity.
- **HV Feeder Reinforcement, South Wales, various sites (£2.0m):** smaller sections of HV cables to be overlaid or new HV feeders established to increase capacity.
- **HV/LV substation reinforcement, South Wales (£0.25m):** transformer sizes in existing locations to be increased or new HV/LV substations established to increase capacity.

- **HV Feeder Reinforcement, South West, various sites (£0.95m):** smaller sections of HV cables to be overlaid or new HV feeders established to increase capacity.
- **HV/LV substation reinforcement, South West (£0.1m):** transformer sizes in existing locations to be increased or new HV/LV substations established to increase capacity.
- **HV Feeder Reinforcement, West Midlands, various sites (£0.6m):** smaller sections of HV cables to be overlaid or new HV feeders established to increase capacity.
- **HV/LV substation reinforcement, West Midlands (£0.15m):** transformer sizes in existing locations to be increased or new HV/LV substations established to increase capacity.

### **MSA proposals**

A6.6 WPD's submission includes 15 MSA or trunk road EV charging related proposals. These include:

- **Tamworth MSA, East Midlands (£1.87m):** new 33kV connection at a 33-metering substation and associated works, facilitating the release of 18MW of additional demand capacity. Supports MSA rapid charging and potential connection of further renewable generation and other LCT connections.
- **Northampton MSA, East Midlands (£0.75m):** upgrade to 11kV connection at 2 metered substations, each served by new RMUs, fed directly from Banbury Lane Primary. Installation of 1500m of 11kV cable across two circuits to connect to the nearby Primary and two new 11kV circuit breakers at the Primary with potential need to extend the building if other connections in area proceed.
- **Cardiff Gate MSA, M4, South Wales (£1.4m):** extension of the existing 11kV switchboard at St Mellons Primary Substation with two new feeder circuit breakers and installation of 2 x 2.5km 11kV underground, releasing 8MW of demand capacity. Supports MSA rapid charging and potential connection of further renewable generation and other LCT connections

- **Magor, M4 MSA, South Wales (£1.3m):** replacement of the 11kV switchboard at Magor BSP and associated works to accommodate two new 11kV circuit breakers, to provide supplies to Magor MSA. Expected to support 8MW of additional demand capacity for MSA rapid charging and the connection of further renewable generation.
- **Pont Abraham MSA, South Wales (£1.8m):** installation of 2 x 5000m 11kV cables to location within Pont Abraham MSA with associated infrastructure upgrades. Expected to release 8MW of additional demand capacity to serve the MSA with infrastructure able to connect potential further renewable generation within limits of existing 33kV network.
- **Gordano, M5 MSA, South West (£1.7m):** installation of new cables (~1.5km) in single cable sections and unbundle with new 33kV equipment to form a 33kV ring, new 33kV switch room and 33kV cable to connect to MSA through a new 33/11kV primary substation..
- **Frankley North & South M5 MSA, West Midlands (£1.5m):** installation of two new 11KV circuit breakers installed at Bartley Green BSP, with 2 x 3.6km HV cables installed from the BSP to the MSA site. A new 11KV metered substation is to be installed onsite to provide the connection.
- **Gloucester Services MSA, West Midlands (£1.6m):** installation of two new 11kV Cu cable circuits and associated network infrastructure, including installation of two 11kV circuit breakers at Gloucester Services in a building provided by the customer. Project expected to release 8MW of additional demand capacity, primarily for rapid EV charging at Gloucester Services with some scope for further renewable generation and LCT demand growth on south side of Gloucester.
- **Hopwood Park, M42 MSA, West Midlands (£2.0m):** installation two new 11KV circuit breakers at Longbridge 132/11 BSP with two new HV cables installed from the BSP to the MSA site. A new 11KV metered substation is to be installed onsite to provide the 8MW connection. Project expected to release 1-2MW of capacity initially with potential for further support to connections of additional renewable generation.
- **Michaelwood, M5 MSA, West Midlands (£2.4m):** extending the existing 11kV switch board to provide 2 x feeder breakers and lay 2 x 4.7 km cables to the north and south bound MSAs and install with associated infrastructure upgrades. This

infrastructure releases 8MW of demand capacity to the site, which will also be available to support further renewable generation.

- **Norton Cannes, M6 Toll MSA, West Midlands (£1.5m):** installation of two new 11kV circuit breakers installed at Burntwood 132/11kV BSP and two 4km HV cables from the BSP to the MSA site. A new 11kV metered substation is to be installed onsite to provide the 8MW connection. The project is expected to provide 8MW of additional demand capacity for rapid EV charging at the MSA as well as capacity to connect further renewable generation and other LCT demand.
- **Tibshelf Northbound, East Midlands (£5.6m):** installation of two additional 33kV circuit breakers and two 33kV cable circuits from Alfreton BSP to Tibshelf Northbound Services Station. Supported by installation of 33kV equipment and transformation on site and replacement of both 132/33kV transformers with 90MVA units, including associated 33kV cables. Investment expected to release 27MW demand capacity.
- **Watford Gap, East Midlands (£0.2m):** Upgrade to an 11kV connection at 2 metered substations, each served by new RMUs. 200m of 11kV cable is required to make the connection. 8MW of demand released to support the MSA and potential renewable generation connections
- **New BSP at Bridgwater, South West (£4.25m):** scheme will establish a new 2 x transformer 132/33kV BSP near Bridgwater GSP with associated infrastructure works. The new grid transformers will feed a new 33kV switchboard from which the new Gravity Project connection and other customers (the Gravity Project is expected to fund the costs of the 33kV cable to their site and the required 33/11kV assets). The new BSP will provide up to 90MVA additional demand headroom (114MVA cyclic) of which 40MVA would be used by Gravity. The new BSP is also expected to create 60MVA of generation headroom.
- **Hammerley Down 33kV Reinforcement, West Midlands (£3.9m):** installation of a further 33kV circuit and create a two-switch mesh at Hammerley Down with an outgoing circuit to Alveston. Upgrades expected to release 15MW of additional capacity will be released, supporting rapid EV charging at local service station and potential connection of further renewable generation and LCT demand.

## Ofgem assessment

A6.7 We have reviewed the 40 proposals submitted from WPD with an investment value of £59.1m. We consider that each of the WPD proposals meets the objectives and requirements of the Green Recovery Scheme (as set out in Chapters 1 and 2 of this decision document) and our review of the engineering justification and costs has not identified any concerns. All proposals have been approved and will be funded through WPDs existing RIIO-ED1 allowances, with new allowances for the West Midlands licence area.