

Annex 19: Social Value Measurement

An overview of our approach to measuring the
social benefit of our ED2 proposals

December 2021

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1 Executive Summary

This Annex describes the collaboration, process and tools we have used to measure the social value of our ED2 investment proposals.

Economic Insight supported Electricity North West Limited (ENWL) with an assessment of the social value generated by 35 of Electricity North West's ED2 proposals.

Benefit values were forecasted following detailed discussions with the relevant stakeholders to gain an understanding of each project's aims and the changes they caused. Benefits fell into four categories:

1. Financial savings Electricity North West will make (i.e. leading to bill savings);
2. Financial savings for customers;
3. Societal benefits (e.g. health / environment), and any assumptions required; and
4. Other customer utility benefits, measured through Bespoke Social Value Research.

The modelling approach adopted was aligned to a national social value framework developed by Sia Partners, government best practice and academic guidance.

We have presented in this document detail of the benefits delivered by the ambitious programme of new activity our customers and stakeholders requested. This shows that the total Net Present Value of these initiatives over just the five years of ED2 is **£1.1billion** greater than the costs. This demonstrates that the plan at a macro level is a fantastic customer value proposition, supporting the people of the North West and the economic regeneration of the region, improving lives, creating jobs and delivering Net Zero.

Each proposal that has had SROI measurement applied is presented in this document with a total net economic benefit per £ spent multiplier, which represents the total NPV (all benefits minus all costs), divided by the cost of the initiative, giving an indication of total value for money. For net SROI, to break even the multiplier would need to be ≥ 0 .

Out of the 35 proposals modelled, 15 achieve higher than average SROI net economic benefit compared to our ED1 internal benchmarks, indicating relatively strong value for money.

7 proposals do not have a positive net economic benefit per £ spent multiplier. For these proposals justification for proceeding with the investment is drawn from other sources, such as compliance with licence obligations, CBA analysis, willingness-to-pay data and/or triangulated stakeholder evidence.

As part of our assurance process, Economic Insight performed a detailed Quality Assessment. This process culminated in written confirmation that only the social benefits derived by changes because of ENWL's proposed investments had been included in our forecasts.

Separately, Sia Partners were commissioned to audit each company's modelling and provide recommendations if adjustments were required. SIA concluded, *'Based on the effective execution of these adjustments and provision of additional justification where required, we are pleased to provide assurance that ENWL has delivered a conservative picture of the value they will provide, in line with the Social Value Framework.'*

2 What is social value measurement?

When making capital budgeting decisions, a company needs to weigh expected costs against expected benefits. A cost benefit analysis aims to account for all costs and benefits over a project's lifetime and

quantify the impact of these. Traditional cost benefit analysis focuses on quantitative (strictly financial) costs and benefits to the organisation and allows for standardised comparison of projects. However, the value of projects with additional, traditionally qualitative impacts are difficult to measure and compare using traditional CBA methods.

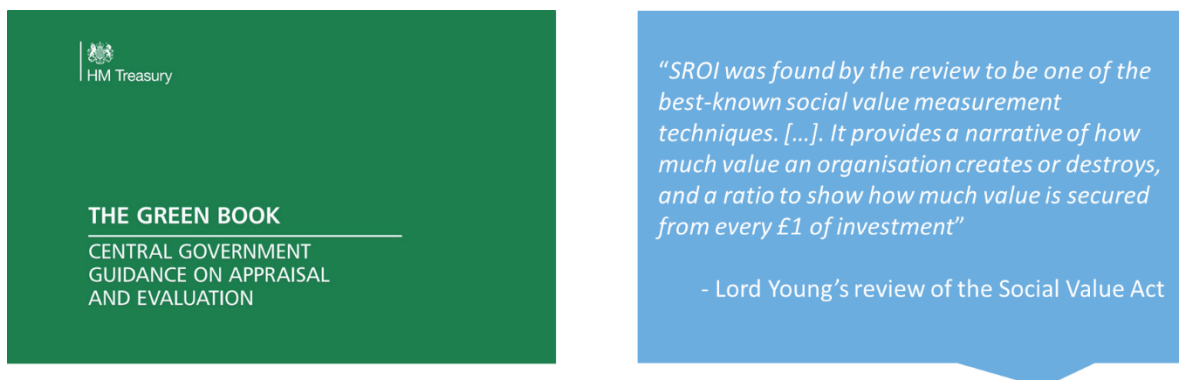
Social value measurement identifies the monetary value associated with positive outcomes received, and costs avoided by society because of a given initiative. It builds upon traditional cost benefit analysis by also measuring and accounting for typically qualitative, social impacts of a project. This is done by using financial proxies, as well as Willingness to Pay (WTP) testing, to quantify social benefits that are not generally monetised (examples provided in Figure 1 below).

Figure 1: Benefits typically modelled via social value measurement



In recent years social value measurement has become a highly-regarded decision making tool.

Figure 2: Central Government endorsement of social value measurement



3 Alignment to best practice principles

Economic Insight has supported ENWL in measuring the social value of its ED2 business plan targets.

Economic Insight has have worked with ENWL across its two most recent Stakeholder Engagement and Consumer Vulnerability (SECV) submissions, and in doing so developed a tool that monitors and forecasts stakeholder engagement activities. Guidelines set by the [UK Cabinet Home Office](#) on the SROI method were followed throughout the design process. Specifically, these guidelines set out how social effects should be incorporated into a cost-benefit analysis.

In 2021, Sia Partners developed a comprehensive social value measurement framework, which incorporates Social Return on Investment (SROI) modelling. The framework, which all DNOs agreed to adopt for the purposes of ED2 business planning, incorporates both traditional cost benefit analysis and Social Return on Investment methods. It uses common proxies to quantity societal benefits, and

HM Treasury Green Book¹ recommendations to allow all DNOs to assess the economic value of their projects through a standardised, fair and comparable mechanism.

Economic Insight undertook a systematic review of the national framework. This identified the methodological adjustments that were necessary to bring the model used in SECV submissions in line with the national framework.

Further to these adjustments, conformity with the national framework was achieved by:

- **Benefits values being calculated on the national framework worksheets.**
This provides visibility on the quality of the proxy values that are used to calculate each benefit, and clearly details adjustments that are made to the value. This gives Ofgem oversight on the adjustments that ENWL has made to its proxy values, compared to other DNOs. By being able to contrast the bias adjustments, it should facilitate a more consistent approach across the regulatory jurisdiction.
- **National 'Proxy Bank' values being used wherever possible.**
This ensures that all DNOs use the same inputs to calculate benefits. When 'Proxy Bank' values are teamed with the remainder of the national framework, variation in the benefits claimed for common activities (for example, the societal effects of reducing carbon emissions) should only occur if there is a difference in either the level of activity undertaken, or the rate of change. Where there are differences, robust comparisons can be drawn between DNOs. This will allow Ofgem to conduct a standardised assessment.

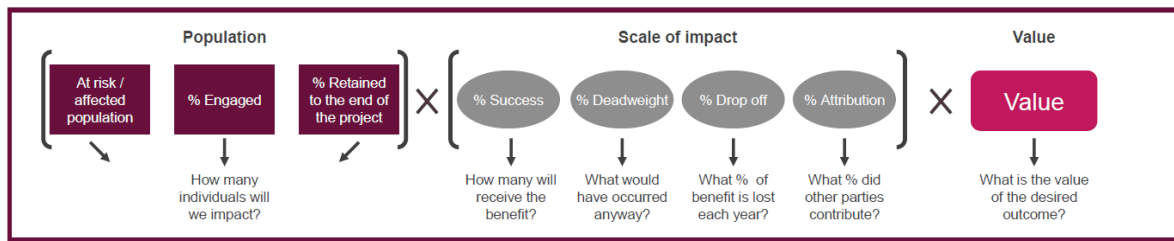
We have committed to using the framework to conduct all our social value measurement for the remainder of ED1 and into ED2. This will enable us to compare the benefits of projects in a fair and standardised format, both internally and externally, with the aim of determining which delivers maximum benefit to customers.

4 Data validation techniques to minimise subjectivity

Social value analysis requires assumptions to be made and tested. In conjunction with the national social value measurement framework, we improved the robustness of our modelling by adjusting the scale of impact and setting an appropriate level of optimism bias. The factors taken into consideration as part of social value analysis are illustrated in Figure 3 below.

¹ The Green Book is compiled by the UK government to help organisations to standardise appraisal methods to justify public spending. The tool is designed for both 'short-listed' appraisal which means that the projects await approval from management with a pre-determined budget, as well as a retrospective review of a project already carried out. However, some aspects differ for reasons that include usability and flexibility.

Figure 3: Formula for calculating social value



The adjustment factors are defined in the Figure 4 below:

Figure 4: scale of impact adjustment factors

Adjustment	Definition
Success (%)	The percentage of stakeholders that the benefit will successfully apply to each year. This should be a conservative assumption that is ideally backed up by research. The probability applies to all future years for the social benefit.
Deadweight (%)	The percentage of the expected benefits would have occurred regardless of the project going ahead (i.e. BAU).
Drop off (%)	The percentage by which we expect the social benefit to be reduced by per year.
Attribution (%)	The percentage of the social benefit that is attributable to another party, e.g. a partner organisation that helps the DNO co-deliver a project.

We determined the most appropriate level of optimism bias by assessing all data inputs against the guidance embedded within the national framework (see Figure 5). With this approach we are 'rewarded' (by a lower optimism bias correction) for using up to date, high quality data.

Figure 5: Optimism bias correction guidelines

Confidence grade	Colour coding	Population / Cohort Data	Evidence base (engagement / impact)	Age of data / analysis	Data Quantity	Scale of impact evidence	Optimism bias correction
1	Green	Figures taken from agency data systems	Randomised Control Trial in UK	Current Data (<1 year old)	Substantial quantity of useful relevant data to ensure result is trustworthy	Detailed and specific evidence to support the values	0%
2	Light Green	Figures derived from local stats	International Randomised Control Trial	1-2 years old			-5%
3	Yellow	Figures based on national analysis in similar areas	Independent monitoring of outcomes with a robust evaluation plan	2-3 years old	A number of pieces of evidence from a range of source reliabilities	Some evidence to support values, though not necessarily specific to the context	-10%
4	Orange	Figures based on generic national analysis	Practitioner monitoring of outcomes with a robust evaluation plan	3-4 years old			-15%
5	Light Orange	Figures based on international analysis	Secondary evidence from a similar type of intervention	4-5 years old	An individual piece of evidence from a less than reliable source	Non-existent or weak evidence	-25%
6	Red	Un corroborated expert judgement	Un corroborated expert judgement	>5 years old			-40%

5 SROI key performance metrics

The SROI tool provides a breakdown of either social/financial or yearly/total values for each individual project, using the metrics illustrated in Figures 6-8:

Figure 6: present value (PV)

Metric	Definition
PV of costs	This value is the sum of all costs for each year of the project discounted using the Weighted Average Cost of Capital (WACC)
PV of avoided costs	This value is the sum of all avoided costs for the DNO for each year of the project discounted using the WACC
PV of customer financial benefits	This value is the sum of all customer financial benefits for each year of the project discounted using the WACC
PV of societal benefits	This value is the sum of all societal benefits for each year of the project discounted using the social discount rate
PV of customer utility benefits	This value is the sum of all WTP benefits for each year of the project, discounted using the social discount rate
Total PV per year	This value is the total sum of all financial and social benefits for each year of the project discounted using the WACC (financial costs and benefits) and Social Discount Rate (social benefits).

Figure 7: Net Present Value (NPV)

Metric	Definition
Financial NPV	All avoided costs, minus the sum of costs (the same as a typical CBA)
Social NPV	All customer financial and societal benefits, minus the sum of costs
Total NPV	This considers all benefits (financial and social) minus all costs, excluding WTP values

Figure 8: Net benefit per £ spent

Metric	Definition
Net financial benefit per £ spent	The Financial NPV of the project divided by the cost (giving a financial benefit per £ spent)
Net social benefit	The Social NPV of the project divided by the cost (giving a social benefit per £ spent)
Customer utility benefit per £ spent	The PV of customer utility benefits divided by the cost of the project (giving an efficiency factor of the customer utility delivered per £ spent)
Total economic benefit (SROI)	The total NPV (all benefits minus all costs), divided by the cost of the initiative, giving an indication of total value for money

These metrics are summarised into two tables – 5-year and 10-year reporting figures and are the values we compared at a project and programme level. 5-year reporting figures were used as standard for most investment proposals (encapsulating the ED2 price control period), however, in a small number of cases we found justification in using 10-year estimates for a longer-term outlook.

We identified the total economic benefit (SROI) as one of the most important metrics and used this to make like-for-like comparisons across the portfolio of business plan proposals measured.

6 ED1 SROI performance benchmarks

Each proposal that has had SROI measurement applied is presented in this document with a total net economic benefit per £ spent multiplier, which represents the total NPV (all benefits minus all costs), divided by the cost of the initiative, giving an indication of total value for money. For net SROI, to break even the multiplier would need to be ≥ 0 .

To provide an indication of whether the social return multipliers reported in our business plan and supporting annexes are 'good', a RAG status has been assigned. As part of this process, we have compared forecasted ED2 SROI to the average performance of similar activities achieved in ED1.

Figure 9 below indicates that investments designed to support electricity users in vulnerable circumstances achieve higher SROI performance than other types of (service/operational) activities. This is because projects that influence health and/or financial benefits to consumers within the confines of a price control typically require less upfront investment and derive greater societal value than environmental initiatives.

Figure 9: RAG status assigned to total net economic benefit per £ spent multiplier

Propositions	Negative SROI multiplier	Low SROI multiplier vs. ED1	Average SROI multiplier vs. ED1	High SROI multiplier vs. ED1
Supporting electricity users in vulnerable circumstances	<0	>0 – ≤ x4	x5 – x9	≥ x10
All other proposals	<0	>0 – ≤ x2	x3 – x5	≥ x6

Although it has now been embedded as a decision-making tool in ED1, SROI measurement has focused more on initiatives included in our Stakeholder Engagement and Consumer Vulnerability (SECV) Incentive. The aim of the SECV Incentive is to encourage network companies to engage proactively with stakeholders to anticipate their needs and deliver a consumer focused, socially responsible and sustainable energy service. To perform well, network companies must perform beyond Business as Usual (BAU) standards (i.e. beyond the requirements of the licence conditions). As such, SECV initiatives have typically performed strongly on SROI. It should be noted that our comprehensive social value measurement of the ED2 plan means that a wider range of initiatives have been modelled.

Proposals with a negative (below zero) net economic benefit multiplier warranted additional scrutiny and justification, before we proceeded with our proposed level of ambition.

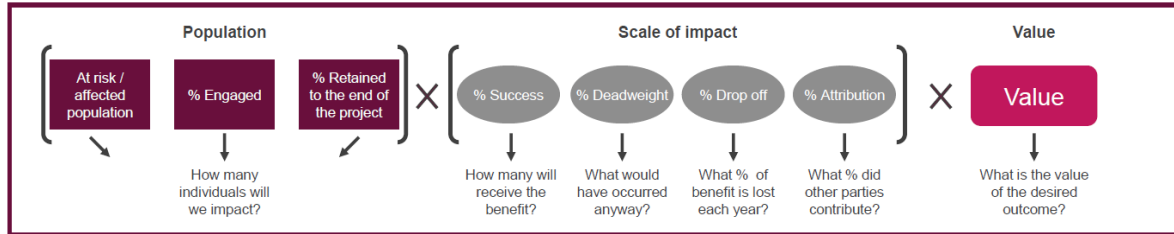
In some cases, we found that we were not able to fairly or accurately measure the full range of benefits through the SROI methodology. In other cases, investment is justified despite a poor SROI due to the investment being required to meet our statutory license obligations.

Due to SROI taking into consideration a wider range of values that enable a more holistic benefit measurement than willingness-to-pay, we attributed a high materiality to this output in our overall assessment and justification of investment.

7 Case study: CVP1 Smart Street

This section provides a case study for the application of the formula (see Figure 10) used to measure social value in our CVP1: Smart Street.

Figure 10: Formula for calculating social value



Step one: defining the population

Smart Street will target 250,000 customers, around 1,000 substations, during the price control period to deliver the benefits as widely as possible. To maximise the societal benefits of the deployment we will select sites based on technical constraints and then filter this based on the incidence of fuel poverty in geographic areas. In the absence of a detailed delivery work plan, we have assumed an even spread of 50,000 additional customers benefitting from Smart Street each year, culminating in 250,000 customer beneficiaries by 2028 (see Figure 11).

Figure 11: Smart Street population

	2023	2024	2025	2026	2027
	50000	50000	50000	50000	50000
	50000	100000	150000	200000	250000

Step two: adjusting for the scale of impact

With the support of Economic Insight, we calculated the scale of impact in accordance with the guidelines set out in the national framework (Figure 12).

Figure 12: Smart Street scale of impact

Description	Start year	End year	Scale of impact				Optimism bias (Proxy)	Research year	Recipient	Value (£)		
			Success (%)	Deadweight (%)	Drop off (%)	Attribution (%)						
Financial benefits for customers												
Financial saving per customer per year		1	10	100.00%					£39.27	2019	Environment	£45
												£0
												£0
												£0
Total financial benefits for customers per year												
Societal benefits												
Average traded price of carbon 2023	1	1	100.00%	0.00%	7.83%	0.00%	0.00%	£1.63	2020	Environment	£2	
Average traded price of carbon 2024	2	2	100.00%	0.00%	7.83%	0.00%	0.00%	£1.66	2020	Environment	£2	
Average traded price of carbon 2025	3	3	100.00%	0.00%	7.83%	0.00%	0.00%	£1.68	2020	Environment	£2	
Average traded price of carbon 2026	4	4	100.00%	0.00%	7.83%	0.00%	0.00%	£1.71	2020	Environment	£2	
Average traded price of carbon 2027	5	5	100.00%	0.00%	7.83%	0.00%	0.00%	£1.73	2020	Environment	£2	
Average traded price of carbon 2028	6	6	100.00%	0.00%	7.83%	0.00%	0.00%	£1.76	2020	Environment	£2	
Average traded price of carbon 2029	7	7	100.00%	0.00%	7.83%	0.00%	0.00%	£1.78	2020	Environment	£2	
Average traded price of carbon 2030	8	8	100.00%	0.00%	7.83%	0.00%	0.00%	£1.81	2020	Environment	£2	
Average traded price of carbon 2031	9	9	100.00%	0.00%	7.83%	0.00%	0.00%	£1.84	2020	Environment	£2	
Average traded price of carbon 2032	10	10	100.00%	0.00%	7.83%	0.00%	0.00%	£1.87	2020	Environment	£2	
Financial saving per customer per year (welfare weighted for fuel poor)		1	10	14.00%		0.00%			£58.91	2019	Vulnerable customers	£88
Total societal benefits per year												

This process encapsulated steps A-D listed below. Where values existed, they were subtracted from 1 and multiplied through as part of the formula in Figure 1.

A. Identifying the success %

100% of customers served by local networks where Smart Street has been deployed, will benefit each year. The probability applies to all future years for the social benefit and is supported by previous innovation research.

B. Deadweight and attribution %

During the benefit measurement process, we had a significant volume of existing data available on Smart Street, due the roll-out of the technology over the last two years. This enabled us to see what the previous realised outcomes had been and means that the information available to model Smart Street is significantly more accurate than for other programmes. As a result, the proxy values used for both the financial and societal benefits can be attributed solely to Electricity North West. Due to this, there was no reason to make attribution or deadweight adjustments to the benefits values.

C. Determining the drop-off %

Reducing customer energy usage will also reduce carbon emissions. The proxy used to measure this impact was from Ofgem's CBA template – the 'average traded price of carbon.'

As ENWL increases the proportion of renewables connected to the grid, it is likely that carbon emissions per unit of electricity will fall over ED2. Therefore, although Smart Street will continue to save consumers the same amount of electricity each year, the environmental benefit will reduce as the carbon saving from this reduced usage lessens.

In line with the Ofgem CBA template,² we used yearly estimates published by BEIS of the average traded price of carbon as a proxy for the monetary value of this carbon saving. This saving reduces on a yearly basis as the carbon intensity of the grid decreases. To do this, we used the formula below:

$$\text{Drop off rate} = \frac{\text{Carbon saving from Smart Street}_t}{\text{Carbon saving from Smart Street}_{t-1}} - 1$$

Drop off is estimated to be the reduction in carbon emissions per year. To generate the 7.83% drop off used in the modelling, we averaged the yearly drop off rate over the ED2 period.

D. Adjusting for optimism bias

We have set the optimism bias to be 0% for both carbon savings and financial savings per customer. The carbon estimate is in line with the recommended adjustment in Sia Partner's Proxy Bank. Our internal data on the financial savings per customer is based on the historical outcomes achieved by Smart Street. The source, specificity, age, and quantity of this data all score highly on the optimism bias confidence grades. High confidence in the accuracy of this data means that, in our view, an optimism bias adjustment is not necessary.

Step three: multiplying by the social value

Application of the Smart Street system has been proven to produce a reduction in customers' energy consumption of between 5% and 8%. The current Typical Domestic Consumption Values ([TDCVs](#)) published by Ofgem in June 2021 translates to the energy reductions as shown in Figure 13 below.

² ['RIIO-ED2 Cost Benefit Analysis \(CBA\) Guidance'](#). Ofgem (2021), page 19

Figure 13: Reduction in consumption expected due to the Smart Street system

Smart Street Energy Savings	PC1 (kWhr)			PC2 (kWhr)		
	Low	Med	High	Low	Med	High
	1,900	3,100	4,600	2,500	4,200	7,100
5%	95	155	230	125	210	355
6%	114	186	276	150	252	426
7%	133	217	322	175	294	497
8%	152	248	368	200	336	568

For the purpose of SROI measurement, the average unit cost for electricity in the UK regions (QEP 2.2.4, last updated 29 June 2021) were obtained from the [government website](#). It should be noted that for the CBA associated with the Innovation Roll-Out Mechanism (IRM) application WSP used a standard variable tariff of £0.1305 for direct debit customers, taken from a supplier’s website.

Applying the average unit rates to the energy consumption savings above produced the potential savings on the retail price referenced in Figure 14:

Figure 14: Potential retail price savings for direct debit customers

Bill Savings due to Smart Street	PC1 (£)			PC2 (£)		
	Low	Med	High	Low	Med	High
5%	£17.94	£29.26	£43.42	£23.60	£39.65	£67.02
6%	£21.52	£35.12	£52.11	£28.32	£47.58	£80.43
7%	£25.11	£40.97	£60.79	£33.04	£55.51	£93.83
8%	£28.70	£46.82	£69.48	£37.76	£63.44	£107.24

We calculated that Smart Street would save Profile Class 1³ customers £39.27 a year (in bill savings) by taking an average of the range of possible bill savings it could generate. £39.27 is the average bill saving enabled for Profile Class 1 customers with low, medium and high usage who have their consumption reduced by between 5% and 8%. By taking account of all possible scenarios, from low savings to high savings, this method calculates a representative bill saving for an average customer.

In consultation with Economic Insight, we applied a ‘welfare weighting’ to the average customer bill saving. This is an appropriate proxy for the additional utility value delivered to households in the lowest income quintile, where they have been specifically targeted with financial savings. Applying it

³ Profile Class 01 - Domestic Unrestricted: Most household consumers fall under this Class.

is in line with the cabinet office objectives that, “SROI is about value, rather than money. Money is simply a common unit and as such is a useful and widely accepted way of conveying value.”

We calculated this value by applying a Green Book approved welfare weighting multiplier to the average £39.27 financial benefit. The theory behind applying this multiplier is that lower income customers place a higher value on each additional pound they receive, than a customer who earns an average income. The Government approved welfare weight for fuel poor customers (who are defined as those in the bottom income quintile) is 2.5x relative to the average taxpayer. As a financial benefit has been applied to all Smart Street customers, we apply a 1.5x (2.5-1) mark-up to this benefit for fuel poor customers. This generates an additional £58.91 benefit for individuals who are fuel poor, bringing their total to 2.5x that of individuals outside of the bottom quintile.

In the Sia Framework, the volume of stakeholders reached is the total number of new customers who have Smart Street deployed each year, profiled in line with the delivery plan. Not all these customers will be fuel poor. Therefore, we utilise the success percentage to represent the proportion of customers enrolled in Smart Street that are fuel poor.

On average, 12.1% of customers in the north west are currently fuel poor. However, we will target the deployment of Smart Street in areas with greater prevalence of fuel poor customers, so they should be overrepresented as a group in this sample.

In ED1, we selected 180 sites from an initial pool of 8,000 so that 16% of all customers benefiting were identified as fuel poor. In ED2, we will relax some of the technical constraints and pick 1,000 from 16,000 substations. This increases the ability to skew, by targeting sites with a higher incidence of fuel poor. However, the more sites that have Smart Street deployed, the closer the project will get to the regional incidence of fuel poverty. Due to the flatness of the distribution curve, the majority of ED2 sites will still fall in the mid to high teens % of fuel poor. Our aim is for 16% of customers who are enrolled in Smart Street to be fuel poor. To avoid overestimating the benefit to fuel poor customers, we conservatively set the success percentage to be the mean of the ED2 Business Plan goal and the regional average. This calculation generates a success percentage of 14%.

Total benefits quantified

The financial and societal benefits have been modelled over a 10-year period. Smart Street will deliver benefits to customers for a much longer time than just the ED2. Estimates suggest that customers could continue to benefit from the project for 45 years. Therefore, restricting the benefits assessment to just the regulatory period would not come close to capturing the total value generated by the project, so we have expanded the period over which benefits can accrue to 10 years. This is the maximum amount available over the Sia Framework, otherwise we would have set it at the lifecycle of the project. **The SROI assessment over a ten-year period is as follows:**

10-year reporting figures		
Economic	Total cost	£78,000,000.00
	Total gross present value	£69,025,745.74
	NPV	£19,925,090.70
	SROI	£0.29

Each proposal that has had SROI measurement applied is presented with a total net economic benefit per £ spent multiplier, which represents the total present value (all benefits minus all costs), divided by the cost of the initiative, giving an indication of total value for money. For net SROI, to break even the multiplier would need to be ≥ 0 . The total net economic benefit per £ spent for Smart Street over a ten-year period is £0.29. For more detailed information on other forms of benefit measurement and the justification for including CVP1 Smart Street in the business plan please see Annex 15A or refer to Annex 01: Customer research findings - willingness-to-pay and triangulation synthesis.

Direct Customer Benefits

The bill impact of the costs of deploying Smart Street will be approximately £0.16 for an individual customer. Customers will take 45 years to pay for the upfront costs of installing Smart Street through their Distribution Use of System charges, whilst receiving reduced bills every year once it is fully operational. Therefore, the direct customer benefit for the 250,000 customers who will have Smart Street rolled out on their network is estimated to be £39.11 per year on average once the technology is installed.

Other qualitative benefits

The roll-out of Smart Street will also provide additional long-term value for money to all customers by releasing network capacity and reducing losses. This will facilitate the future connection of LCTs and will allow deferred network reinforcement, which, in turn, will lead to a reduction in Distribution Use of System (DUoS) charges for all customers.

8 ED2 Business Plan SROI results

To support our justification process, wherever possible, we complemented triangulation with quantitative benefits measurement, the output of which has been summarised below and detail integrated into Annex 01. Economic Insight supported a comprehensive assessment of the social value generated by 35 of our benefit proposals. The modelling approach adopted was aligned to a national social value framework developed by Sia Partners, government best practice and academic guidance. The Total Net Present Value of these proposals which considers all benefits (financial and social) minus all costs over a 5-year period, excluding WTP values is more than £1.1bn. Out of the 35 proposals modelled, 15 achieve significantly higher than average net economic benefit compared to our ED1 internal benchmarks, indicating excellent value for money.

Out of the 35 proposals modelled, 15 achieve higher than average SROI net economic benefit compared to our ED1 internal benchmarks, indicating relatively strong value for money.

In some cases, a strong net economic benefit per £ spent multiplier, justified a higher level of ambition than we had originally set-out in our draft plan. An example of this is **B37: making our sites havens for wildlife**, where 45% of our Plugged-In Public Panel wanted to see greater ambition from us. A high

multiplier (x19) influenced our commitment to scale up this programme and a strategy to target biodiversity improvements in communities with greater concentrations of fuel poor customers, where the societal benefit will be greater.

In other cases, a lower multiplier enabled us to change course and adapt our plans. An example of this is **B29: Establishing a new annual Powering our Communities fund**. We used SROI forecasting to recalibrate the design of the fund so that a greater weighting of investment will be directed towards community energy projects which return the highest societal benefit, thus increasing the value returned to bill payers.

Where alternative justification existed, we opted to proceed with investments with a lower net economic benefit per £ spent multiplier. This includes **CVP1: Smart Street - reducing cost and carbon for customers**. Here we applied the options set-out within the Smart Street EJP to Ofgem's CBA model, which measures the costs and benefits accruing over a longer period (45 years) than the social value framework (5-10 years). This enabled us to test specific upsizing options to determine the most ambitious proposal which could be cost-justified. In addition, positive support from customers in our willingness-to-pay research enhanced our justification.

Proposals with a negative (below zero) net economic benefit multiplier warranted additional scrutiny and justification, before we proceeded with our proposed level of ambition. **We were not able to fairly or accurately measure the full range of benefits for some benefits or outputs using this method**. Examples of this include **B26: Improving overhead line safety** and **Output 5: Investing in Electricity System Restoration readiness**. Where this was the case investment has been primarily justified through a requirement to meet our statutory licence obligations.

A summary of the results is provided in the table below:

#	Output	Current performance	New target	Total NPV	Social return multiplier
	Customer				
	<i>Meeting our customers' needs</i>				
B1	Making it even easier for customers to contact us	Five existing channels	Two new channels: chat bots and self-service facilities	£ 3,016,799	✓ (x25)
B2	Providing additional support to businesses during power cuts	Trial of Business PSR	Fully operational Business PSR	£ 9,143,935	✓ (x54)
B3	Improving the speed and quality of our responses to customers	Peak of 90.6% customer satisfaction (20-21)	At least 90% customer satisfaction despite increasing demands and expectations	£ 14,542	✓ (x0)
B4	Providing faster quotes and faster completion for new connections	Exceeding Ofgem targets	Exceeding Ofgem targets	£ 286,234	✓ (x0)
B5	Reducing the time it takes to complete emergency roadworks	Five days	Three days	£ 279,484,502	✓ (x12)
B6	Increasing community-focused approaches to engagement	Successful trials	Community engagement team improving access to information on network issues	£ 8,787,287	✓ (x13)
	<i>Supporting electricity users in vulnerable circumstances</i>				
B7	Collaborating more closely with other utilities	Utilities Together forum with Cadent and United Utilities	Enhanced co-ordination with utility providers to support vulnerable customers	£ 2,405,980	✓ (x39)
B8	Doubling investment in referral networks	£250k a year	£500k a year	£ 20,333,538	✓ (x10)
B9	Expanding the reach of our Priority Services Register	50% of those eligible are registered	At least 60% of those eligible to be registered	£ 51,838,612	✓ (x12)

B10	Creating an innovation fund to ensure no one is left behind	None	New £250k a year fund			
B11	Supporting customers in fuel poverty	Various initiatives and trials e.g., Citizens Advice partnership	£2m a year to support 250k customers in fuel poverty	£	45,251,028	✓ (x6)
B12	Developing new customer advisory panels	Panels set up for business plan engagement	New panels including a panel for customers in vulnerable circumstances	£	6,040,368	✓ (x2)
B13	Home welfare visits for electricity users in vulnerable circumstances experiencing long-duration power cuts	Ad hoc welfare visits.	We'll proactively offer welfare visits to all customers in vulnerable circumstances who are without power for 12+ hours.	£	132,854	✓ (x1)
B14	Introducing all-colleague training for vulnerable circumstances and mental wellbeing	Training focused on contact centre colleagues	100% of colleagues trained in vulnerability and mental health	£	1,856,449	✓ (x1)
Network						
<i>Delivering a reliable network</i>						
B15	Reducing the number of power cuts	Once every four years/ 28 interruptions per year per 100 customers	Reduce frequency of power cuts by 20% from 2021-2023 levels	-£	10,744,985	✓ (x-1)
B16	Reducing the duration of power cuts	27 minutes lost per year per 100 customers	Reduce time off supply by 20% from 2021-2023 levels	£	5,828,999	✓ (x0)
B17	No 'worst-served' customers by the end of ED2	Limited programme using Ofgem's ED1 worst served customer scheme	No 'worst-served' customers by Ofgem's new definition by 2028	-£	3,613,913	✓ (x0)
B18	Improving reliability for electricity users in vulnerable circumstances	Investments for 56 key sites only (hospitals etc.)	Improved network reliability for areas where there is a high number of electricity users in vulnerable circumstances	-£	8,673,551	✓ (x-1)
<i>Delivering a resilient network</i>						

B19	Improving flood protection	All sites identified by EA flood data protected from risk of flooding in a 1 in 100-year storm event	Protect 21 new and 15 existing sites identified by Environment Agency data from risk of flooding in a 1 in 100-year storm event	£	350,153,667	✓ (x115)
B20	Improving our management of trees near overhead lines	Compliance	Enhanced management and 10,000 trees planted each year	-£	30,094	✓ (x0)
B21	Increasing cyber resilience	Completed self-assessment under new Cyber Assessment Framework	Comply with requirements of Network & Information System Regulations	£	118,357,569	✓ (x10)
B22	Maintaining resilience in a changing climate	Monitoring climate change effects	Implementing Climate Change Adaptation Strategy			
Keeping our communities safe						
B23	Making electricity in high-rise buildings safer	Monitoring electrical risks in 52 highest risk high-rise buildings	Installing electrical monitoring in 234 high risk high-rise buildings	-£	2,755,805	✓ (x0)
B24	Delivering safety campaigns	Taking part in national safety awareness campaigns	Leading regionally-focused, multi-utility safety campaigns	£	3,427,471	✓ (x37)
B25	Increasing safety education	Safety education focused on primary schools	Wider safety education focused on secondary schools	£	13,332,001	✓ (x46)
B26	Improving overhead line safety	Developed and trialed LineSIGHT technology to identify low-hanging lines	Roll-out LineSIGHT technology across the overhead line network	-£	20,661,512	✓ (x-1)
Environment						
Leading the North West to Net Zero						
B27	Helping customers connect low carbon technologies	Providing capacity in line with our network management plans and forecasts	Ensuring capacity is provided in the right place and at the right time as demands increase	£	279,621,067	✓ (x8)

B28	Removing constraints for renewables	Constraints in certain areas increasing the cost of renewable generation connection	Remove constraints for renewable generation connection	-£	19,385,423	✓ (x-1)
B29	Establishing a new annual community energy fund	£75,000 per year fund	Fund increasing from £100k a year to £1m by end of ED2 to support sector growth	£	2,730,682	✓ (x5)
B30	Unlooping customers' power supplies	Few hundred services unlooped when requested	Unloop 32k services to properties adopting low carbon technologies	£	58,660,582	✓ (x1)
B31	Providing a decarbonisation advice service	Online decarbonisation hub recently established (www.enwl.co.uk/GoNetZero)	Continue to provide, develop and promote advice hub			
Improving our direct environmental impact						
B32	Reducing our business carbon footprint	Two Zero carbon sites and a 26% reduction in carbon footprint (2015-2020) to 18,051 tCO2e/yr	Five new Zero carbon sites. Reduce carbon footprint to 8,175 tCO2e/yr	-£	3,970,728.00	✓ (x-1)
B33	Reducing leakage from oil-filled cables	More than 30k litres of oil leaked per year on average	Less than 25k litres of oil leaked per year on average (17% reduction)			
B34	Removing overhead lines in beauty spots	Remove 7-8km of overhead line a year	Maintain programme	£	12,603,309.86	✓ (x3)
B35	Reducing losses from the network	11 GWh per year through proactive programme	Reduce losses by a further 8 GWh per year	-£	6,289,368.00	✓ (x-1)
B36	Reducing emissions of potent greenhouse gases from equipment	SF ₆ leakage rate at 0.32% per year	Reduce SF ₆ leakage rate to below 0.3% per year	-£	8,002,360.62	✓ (x-1)
B37	Making our sites havens for wildlife	11 sites enhanced, 30 more identified	100 sites enhanced	£	5,247,835.21	✓ (x19)

Consumer Value Propositions						
CVP1	Smart Street: Reducing cost and carbon for customers	64,000 customers	Extend Smart Street to 250,000 households	£	19,116,901	✓ (x0)
CVP2	CLASS: Balancing the UK grid in a cheaper, lower carbon way	Reducing voltage on demand to provide balancing services to the ESO	Use of CLASS to reduce voltage on demand to provide balancing services to the ESO	£	19,621,815	✓ (x19)

The social value results are reflected upon in greater detail in Annex 01: Customer research findings (Willingness-to-pay and triangulation synthesis). Annex 01 includes information regarding the justification for each investment proposal and the extent to which SROI, among other decision-making tools, has influenced the ambition observed in our final business plan proposals.

9 Assurance process

Economic Insight conducted a final Quality Assessment (QA) of ENWL's application of the benefits quantification tool to assess its approach, and highlighted concerns about any potentially overstated benefits before submission. The main purpose of this was to check that the model is only being used to measure the change created by ENWL's action. That is, the QA ensured that the economic value created by either existing activity or other agents is not included in the benefits assessment.

The QA included two key steps to ensure a consistent approach across the benefits tracking process:

- 1 **A sense check of the activity tracking estimates where these were provided by ENWL.** This checked that the nature and level of the activities tracked were consistent with what had been discussed between Economic Insight and ENWL during an initial assessment of each activity.
- 2 **A review of any changes that were made to the assumptions.** Where there were gaps left in the modelling for ENWL to complete based on internal information, Economic Insight checked that the new data was both plausible and realistic.

This QA process culminated in written confirmation from Economic Insight that only the social benefits derived by changes because of ENWL's proposed investments had been included in our forecasts.

In September 2021, to improve comparability and assure Ofgem that the joint approach is delivering consistent figures, the DNOs commissioned Sia Partners again to audit each company's modelling and provide recommendations if adjustments were required. In October 2021, Sia Partners wrote to ENWL with a list of recommendations. Key among the recommendations were:

- To ensure consistency with the other DNOs, SIA recommend using the most recent figures from Ofgem's CBA spreadsheet (v6.0) for both the carbon price and greenhouse gas (GHG) conversion factor for each year. It stated, *'it is important to recognise that ENWL has followed the initially suggested values. However, Ofgem's figures provide more granularity, accuracy, and consistency with the rest of the business plan'*. This recommendation was taken-up, with Ofgem's latest figures used in an updated forecast;
- Sia Partners queried the use of the largest financial savings (£69.48) and consumption profile in our Smart Street CVP assessment, when more conservative options were available. Subsequently we decided to use a blended average (£39.27).

SIA observed that Electricity North West had provided sufficient evidence to justify that the scale, reach and qualitative evidence used in Smart Street and CLASS benefit measurement was appropriate.

SIA concluded, *'Based on the effective execution of these adjustments and provision of additional justification where required, we are pleased to provide assurance that ENWL has delivered a conservative picture of the value they will provide, in line with the Social Value Framework.'*

The ENWL CEG reviewed the Smart Street CVP principles at a dedicated session in November 2021.

10 Conclusions

The social value modelling approach we adopted was aligned to a national social value framework developed by Sia Partners, government best practice and academic guidance. With the support of industry experts Economic Insight, we quantified the social value of 35 investment proposals, making it the biggest social value exercise we have ever undertaken. The rigour of the measurement exercise was enhanced further by an assurance process which confirmed we have delivered a conservative picture of the value our ED2 proposals will provide, in line with the Social Value Framework.

We look forward to Ofgem reviewing our social value measurement in the round, triangulating it as we have, with other key inputs that in their totality, form the justification for our investment proposals set out in the main narrative of the Business Plan and supporting Annex 01.

11 National proxy bank

Category	Proxy	Unit	Social Value	Recipient	Specific recipient	Source (Organisation)
Health	Cost of an ambulance call out	Per incident	£ 242.00	Health services	NHS	NHS
	A&E attendance (all scenarios)	Per incident	£ 166.00	Health services	NHS	NHS
	Avoided fatality	Per incident	£ 1,897,129.00	Health services	Private sector	Road accidents and Safety Guidance
	Cost of a GP visit - General Medical Services activity	Per hour	£ 130.00	Health services	NHS	PSSRU
	Hospital inpatients - elective and non-elective admissions	Per incident	£ 1,935.00	Health services	NHS	NHS
	Hospital outpatient attendance	Per incident	£ 130.00	Health services	NHS	NHS
	Mental health care clusters	Per bed per day	£ 436.00	Health services	NHS	NHS
	Care homes for people requiring long-term mental health support (18-64)	Per week	£ 823.00	Health services	Local authority	PSSRU
	Average cost of service provision for adults suffering from depression and/or anxiety disorders	Per person per year	£ 5,765.00	Health services	NHS	The King's Fund
	Average cost of service provision for children/ adolescents suffering from mental health disorders	Per person per year	£ 284.00	Health services	NHS	The King's Fund
	Respiratory health problem from poorly insulated dwellings	Per customer	£ 123.00	Health services	NHS	Asthma UK
	Average annual cost of patient with Chronic Obstructive Pulmonary Disease (Respiratory problems)	Per year	£ 4,202.00	Health services	NHS	NHS
	Cost of treating type 1 Diabetes	Per year	£ 8,518.00	Health services	NHS	JDRF
	Alcohol misuse - estimated annual cost to the NHS of alcohol dependency	Per year per dependent drinker	£ 3,789.00	Health services	NHS	NICE
	Counselling services in primary medical care	Per hour	£ 55.00	Health services	NHS	PSSRU
	Wheelchair or disability access - initial cost	Per installation	£ 1,914.00	Health services	Private sector	DWP
	Non-fatal workplace injury - all forms of injury	Per incident	£ 8,244.00	Health services	Multiple	HSE
	NHS Dentist	Per hour	£ 108.00	Health services	NHS	PSSRU
	Avoided death related to electricity accidents	Annual value per person	£ 202.35	Customers	Customers	UK Fire Research and Stats
	Education	City & Guilds Level 2 Qualification (GCSE equivalent)	Per person per year	£ 1,977.00	Economy	HM Treasury
Marginal Lifetime Benefit of Achieving 2+ A Levels for males		Lifetime	£ 101,309.00	Economy	HM Treasury	DFE
Marginal Lifetime Benefit Achieving 2+ A Levels for females		Lifetime	£ 85,643.00	Economy	HM Treasury	DFE
State-funded school teacher (including salary and on-costs) - across all settings and roles		Per year	£ 48,813.00	Economy	Local authority	Government
Customers are educated about online connectiveness		Per customer per year	£ 4.42	Customers	Customers	Cebr
Increased financial skills		Per customer	£ 265.00	Customers	Customers	Learn Direct
Quality of life	Increase in quality of life for customers	Per person per year	£ 23,413.00	Customers	Customers	Frijters
	Elderly are able to stay at home instead of going to a day centre	Per person per year	£ 58.00	Vulnerable customers	Elderly customers	Unit costs of Health and Social Care
	Elderly are able to stay at home instead of going to a care home	Per person per year	£ 831.50	Vulnerable customers	Elderly customers	PSSRU
	Reduction in outage time during power cut	Per hour	£ 55.00	Customers	Customers	Citizens Advice
	Reducing stress during an outage	Per person	£ 35.00	Customers	Customers	Reed
	Digital channels reduce face time required for customers to interact with DNO	Per hour	£ 8.21	Customers	Customers	Government
	Customers feel in better control of their lives	Per customer per year	£ 82.10	Customers	Customers	PSSRU
	Annual cost of loneliness (for the elderly)	Per customer per year	£ 600.00	Vulnerable customers	Elderly customers	LSE
	Average cost of a grocery delivery	Per incident	£ 4.00	Customers	Customers	Love Money
	Reduction in negative impact of cold weather on customers' health (QALY)	Per customer	£ 2,760.00	Customers	Customers	Europe PL
	Customers feels part of a community	Per customer per year	£ 11,600.00	Vulnerable customers	Vulnerable customers	Global Value exchange
	Relief from debt burden	Per customer	£ 1,900.00	Customers	Young customers	ONS
	Housing	Average cost of a complex eviction (housing)	Per incident	£ 7,700.00	Local authorities	Local authority
Average cost of a simple repossession (housing)		Per incident	£ 803.00	Local authorities	Local authority	Shelter
Temporary accommodation - cost of housing a homeless household in hostel accommodation		Per week	£ 125.00	Local authorities	Local authority	Shelter
Fire	Average consequence cost per fire	Per incident	£ 6,960.00	Local authorities	Multiple authorities	National Archives
	Average cost of a fire in a domestic building	Per incident	£ 53,498.00	Local authorities	Multiple authorities	National Archives
	Average cost of a fire in a commercial building	Per incident	£ 91,177.00	Local authorities	Multiple authorities	National Archives
	Average fire safety labour costs	Per hour	£ 19.00	Local authorities	Fire service	National Archives
Avoided CO related injury	Per incident	£ 228.00	Health services	NHS	NHS	

Category	Proxy	Unit	Social Value	Recipient	Specific recipient	Source (Organisation)
Energy	2020 - 25 average traded price of carbon	£/tCO ² e	£ 36.70	Environment	Environment	BEIS
	2025 - 30 average traded price of carbon	£/tCO ² e	£ 67.43	Environment	Environment	BEIS
	Air quality health impacts: central damage cost of Nox	£/tonne	£ 6,199.00	Environment	Environment	Defra
	Air quality health impacts: central damage cost of SO2	£/tonne	£ 6,273.00	Environment	Environment	Defra
	Air quality health impacts: central damage cost of NH3	£/tonne	£ 6,046.00	Environment	Environment	Defra
	Air quality health impacts: central damage cost of VOC	£/tonne	£ 102.00	Environment	Environment	Defra
	Air quality health impacts: central damage cost of PM2.5	£/tonne	£ 105,836.00	Environment	Environment	Defra
	Average saving from switching supplier	Per incident	£ 350.00	Customers	Customers	Energy Scanner
	Average saving from fitting PV panels	Per household over 10 year pe	£ 2,380.00	Customers	Customers	UK Power
	Annual saving from an EV	Per customer per year	£ 1,008.00	Customers	Customers	Nimble Fins
Employment	Sickness absence - economic (direct) cost to employers	Per day	£ 88.00	Economy	Employers	CIPD
	Job Seeker's Allowance - benefits from a workless claimant entering work	Per claimant per year	£ 31,223.00	Economy	DWP	DWP modelling (unpublished)
	Job Seeker's Allowance - benefits from a workless claimant entering work	Per claimant per year	£ 16,070.00	Economy	DWP	DWP modelling (unpublished)
	Disability Living Allowance Care component: highest	Per week	£ 86.00	Local authorities	DWP	Government
	Carer's Allowance Weekly payment	Per week	£ 65.00	Local authorities	DWP	Government
	Creation of a new job	Per person per job	£ 36,611.00	Economy	Customers	ONS
	Value of a full day's volunteering to society	Per person	£ 95.34	Local authorities	Local authorities	ONS
	Social worker - adult services with qualification costs	Per hour	£ 62.00	Local authorities	Local authority	PSSRU
Crime	Offender, Prison Average cost across all prisons, including central costs	Per year	£ 38,974.00	Local authorities	Criminal Justice System	Government
	Unit cost of court event: Violence against a person (over 18)	Per person per event	£ 15,279.00	Local authorities	Criminal Justice System	NAO
	Criminal proceedings: Arrest - detained	Per incident	£ 750.00	Local authorities	Police	Salford Police
	Domestic violence	Per incident	£ 12,903.00	Local authorities	Multiple	Lancaster University
Transport	Avoided cost of public transport	Per journey	£ 2.33	Customers	Customers	TAS partnership
	Avoided cost of private transport	Per customer per year	£ 111.68	Customers	Customers	NI Direct government services