

# RIIO GD2 Business Plan

## Consumer Value Proposition

December 2019



**SGN**  
Your gas. Our network.

[www.sgn.co.uk](http://www.sgn.co.uk)

---

## Contents

<b>1</b>	<b>Consumer Value Proposition – Detailed Appendix</b>	<b>1</b>
1.1	Productivity delivered over GD2	3
1.2	Absorbed weather risk	3
1.3	Aligning allowances with workload	4
1.4	Environmental Action Plan initiatives	5
1.5	Bespoke safety and reliability outputs	6
1.6	Additional information and granularity of CBA information	6
1.7	New services for vulnerable households - financial savings	7
1.8	New services for vulnerable households – social benefits	7
1.9	Community Action Projects	7
1.10	Innovation funding	7
1.11	Open data	8
1.12	Supporting decision making	8
1.13	GSMR standards	9
1.14	Hydrogen standards	9

---

# 1 Consumer Value Proposition – Detailed Appendix

Ofgem’s business plan guidance states that *“Companies may bid for a reward on the quality aspects of its plan as revealed through the CVP. In its CVP, a company should demonstrate the additional value its plan will generate for existing and future consumers and consumers in vulnerable situations. The reward will be reflective of this additional value.”* This appendix sets out the detailed calculations and assumptions underlying our Consumer Value Proposition (CVP) which is summarised in Chapter 5 of our plan.

We included an initial quantification of our CVP in our October business plan and received some feedback on this from our CEG. This update reflects that feedback and provides more robust quantifications. However, it is important to recognise that many sources of incremental consumer value that will be delivered by our plan cannot be quantified such as the level of customer service and delivery high quality outcomes (see business plan section 5).

At the same time, the quantifications that we provide here are necessarily based on assumptions. We have sought to draw on the best available evidence to quantify our CVP, and wherever assumptions were necessary we have sought to take a conservative approach (i.e. choosing assumptions which give a lower CVP value). In some cases we have also presented a range, based on flexing the underlying assumptions.

We note that Ofgem have provided limited guidance in terms of the definition of what is eligible to be considered for the CVP or how it should be calculated. Furthermore, there has been no broader industry discussion of a manner that would promote consistency between network companies on approach or valuation.

We encourage Ofgem to support further engagement with and between the companies on their CVPs prior to the draft determination being issued. This would recognise that the concept of the CVP was first introduced in Ofgem’s Sector Specific Methodology Decision in May. Specific guidance on how this would be implemented was only published in the June business plan guidance and there has been limited discussion on the details since then.

Without further engagement we are concerned that Ofgem will not have a comparable point of reference from which to either penalise or reward business plans submissions.

We have quantified 15 separate sources of consumer value, and we have separated these into current consumers (which we interpret as being within the GD2 period); future consumers (after GD2); and vulnerable consumers. The CVP quantification is summarised in the table below.

Measure	Vulnerable Customers (£m)	Current Customers (£m)	Future Customers (£m)	Total (£m)	Summary
Productivity delivered over GD2	0	59	157	217	Value of our stretching target of 1% productivity in GD2, over-and-above economy-wide productivity of 0.3%
Absorbed weather risk	0	7	0	7	Estimated value to customers of SGN adopting the risk of assuming mild GD1 winters as the baseline for our cost forecasts
Aligning allowances with workload	0	96	0	96	Identifying options through which we are able to align workload and allowances more precisely through a series of price control deliverables, volume drivers, use it or lose it mechanisms and reopeners.
Environmental Action Plan initiatives	0	18	39	56	Identified as the difference between our customers' stated willingness to pay for environmental measures and the actual cost of the measures incurred.
Bespoke safety and reliability outputs	0	37	13	50	The present value associated with bespoke outputs identified in the plan.
Additional information and granularity in CBAs	0	3	0	3	Additional information associated with providing CBAs down to a £0.5m threshold rather than Ofgem's £2m threshold.
New services for vulnerable households – financial benefits	40	0	0	40	Initiatives such as energy advice and efficiency measures, appliance repairs and servicing provide direct financial savings for vulnerable customers on energy costs.
New services for vulnerable households – social benefits	81	0	0	81	Health and well-being benefits of the proposed vulnerability initiatives (excludes direct financial savings).
Community Action Projects	3	0	0	3	The direct financial impact and social value generated by our community investment programme.
Innovation funding	0	20	12	31	Value to society of SGN-funded innovation under this business plan, based on our direct contribution of 10% of all innovation spend (both BAU and non-BAU).
Open data	0	2	1	3	Estimated value of open data in contributing to economic growth, by enabling others to use the data more freely
Supporting decision making	0	0	5	5	Supporting effective engagement with Local Authorities and Governments to provide high quality robust data from which decisions can be taken
GSMR standards	0	0	101	101	We are promoting a change in GSMR standards supported by the evidence generated during our 'opening the gas market' project, which is expected to substantially reduce ballasting costs.
Hydrogen standards	0	0	26	26	An estimate of SGN's contribution to specifying technical standards for hydrogen (based on Committee on Climate Change scenario projections of the value that could be realised through a hydrogen decarbonisation pathway).
<b>Total</b>	<b>124</b>	<b>241</b>	<b>354</b>	<b>719</b>	

---

The total CVP is £719m, of which £124m arises for vulnerable customers; £241m arises for current customers; and £354m arises for future customers.

We describe each source of CVP more fully in the rest of this appendix – including identifying how and why each item represents additional value beyond the minimum requirements, and beyond the functions typically undertaken by an energy network company as business as usual.

All the values that we present in this quantification are discounted to a present value as of the first year of GD2. For discounting purposes, we have used the standard discount rate assumption of 3.5% which is specified in HM Treasury’s Green Book. Therefore, these figures can be used as the basis for a CVP award granted to SGN at the start of the price control, subject to updating any specific timing assumptions. However, Ofgem has not yet given any clear guidance as to the correct/consistent approach to discounting and this must be kept in mind if comparing figures across the GDN business plans. We understand that any decision about the timing of any CVP award will affect the discounting calculation which is appropriate. We would look to discuss this further once Ofgem has considered the practicalities of any CVP award.

All the figures calculated below are pre-consumer sharing factor.

## 1.1 Productivity delivered over GD2

Ofgem’s guidance states that a CVP reward will be available for providing service quality levels that are higher than existing levels and delivered at the same or lower cost. As set out in our plan, we are proposing to introduce across the board improvements in service quality levels, building on our already industry-leading performance in areas such as customer service and our approach to vulnerable customers.

We are delivering this quality improvement while at the same time embedding a productivity assumption on costs at a rate of 1% per annum. As such, we are delivering more for less in GD2.

As explained in section 12c of the business plan, our productivity target goes above and beyond. First Economics states that a reasonable baseline level of productivity for RIIO-GD2 would be in the region of 0.3%. We have pushed significantly further than this with our assumption of 1% productivity.

Our CVP is therefore calculated by taking the difference – i.e. 0.7% incremental performance, over and above the minimum level of 0.3% over the GD1 period and discounting it back to a current day value. This is extra value for consumers in GD2 in the form of cost savings arising from our productivity target, equivalent to consumer value of £39m in total.

We also estimate the long-term value to future consumers in the ten years beyond GD2 arising from achieving this incremental performance. This is because the improvements we achieve in GD2 will essentially be ‘locked in’ for consumers from GD3 onwards.

We estimate the direct benefit to current consumers to be £59m and the long-term benefit to future consumers to be £157m on the basis that the benefit is maintained for two further price control periods after GD2.

## 1.2 Absorbed weather risk

Ofgem’s guidance notes that a CVP may be rewarded for providing services at lower cost, or for highlighting risks of which Ofgem would not otherwise have been aware. As we explain in section 7.4.1 in our plan a key risk that we have absorbed on behalf of consumers for RIIO-GD2 is the risk associated with harsher winters.

Typically, we would size our emergency service response team to have enough capacity to meet demand in the average winter. However, as we have set out in our Emergency Service appendix (013), Emergency Service, we have more recently been experiencing winters which - whilst having very cold incidents - are typically milder

---

on average, compared to the longer-term average.

In order to reflect this, we have moved from longer-term baseline to a baseline that is more reflective of the weather observed in GD1. However, in making this adjustment, we are taking on the risk that this trend is not sustained and that in GD2 we experience a return to winters with extended cold periods, in line with longer-term averages.

In this instance we are bearing the risk of the additional cost exposure that we would incur. Based on the savings that we have achieved in GD1, we estimate that milder winters have led to savings of approximately £4m per year compared to the longer term 20-year average. If we assume that there is a 40% probability of the colder weather returning then we can estimate the anticipated value to customers of the savings delivered.

On this basis we estimate that the present value to customers over the five years of the price control is £7m. Of course, there is a risk to SGN that winters may be even harsher than this, and also the possibility that winters will be in line with the GD1 average. Our CVP proposal should reflect the value that customers receive as a result of us taking on greater risk.

### 1.3 Aligning allowances with workload

In the plan we have looked at options through which we are able to align workload and allowances more precisely through a series of price control deliverables (PCDs), volume drivers, use it or lose it mechanisms and reopeners. Ofgem's guidance notes that a CVP can be awarded for uncertainty mechanisms that highlight risks to consumers of which Ofgem would not otherwise have been aware. Similarly, Ofgem's sector specific methodology says a CVP can be awarded for uncertainty mechanisms that protect the consumer.

In chapter 12 of the business plan we have identified a number of uncertainty mechanism that we believe will align allowances more closely with the delivery of the actual plan. We have quantified the value of these as follows:

- For PCDs, we have assumed that there is a 5% benefit to consumers as a result of changing the risk profile away from consumers onto network companies. Under a PCD the output is a clearly defined deliverable. If a project is no longer required and as such is not delivered, then the allowances are returned to consumers, and there is limited opportunity to move allowances should priorities change during the price control period. This increases the risk that should a new project have to be implemented to maintain the integrity of the network then it is unfunded. We have attributed 5% of the total PCD value as value to customer as a result.
- For volume drivers, where we have identified an uncertainty in the forecasts, and identified a volume driver is the most appropriate way of managing that uncertainty, we have submitted our best estimated into the business plan data template. However, we recognise that with uncertainty surrounding decarbonisation pathways the realised investment requirement is likely to be significantly different from the plan forecasts. Our proposal should ensure that Ofgem has the mechanism to deal with this uncertainty. Customers will benefit from closer alignment of costs with allowances, and from enabling sufficient flexibility to enable us to respond to changing drivers of investment need. As such we have attributed a 5% of the value of volume drivers to being in the consumers interest.
- Use-it or lose-it mechanisms are similar to a PCD, except that they are more incremental in their application. We have assumed a forecast for GD2 within our baseline allowances to enable us to meet consumer ambitions, particularly when it comes to environmental measures, such as the delivery of low emission vehicles, PV or energy efficiency measures. We have assumed a 10% value to consumers if volumes are not delivered in the same numbers as anticipated today and the forecasts are too high.

- For reopeners, these are triggered only once (or occasionally twice) within the price control; and to be triggered the network needs to demonstrate that the expenditure has exceeded a materiality threshold. As well as the materiality threshold, the reopener will be based on more robust data, that is collected specifically to enable more accurate pricing over the previous years. On this basis, given that we have proposed 0.5% of allowed revenue as a threshold in section 12, and the additional consumer value of accuracy we have estimated a 10% value to consumer associated with reopeners.

On this basis we estimate that the present value to customers over the five years of the price control is £96m.

## 1.4 Environmental Action Plan initiatives

Ofgem’s guidance states that a CVP can be awarded for “well-justified initiatives in the Environmental Action Plan to reduce the environmental impacts of the network that will result in measurable outcomes that are valued by consumers.” Our environmental action plan is detailed in chapter 9 of the business plan and includes a range of stretching and specific targets that will reduce the impact of our network on the environment. This will have clear and direct benefits for customers.

On the basis of the willingness to pay research that we have undertaken we have estimated the difference between what our domestic customer and SME customers state that they would be willing to pay, for each of the questions posed in the WTP research and the total amount that they would be willing to pay for all measures. On this basis we are able to identify that the sum of the individual questions suggests a total WTP of £12.5 per year for domestic customers. We have then reduced this by 30% to take into account the amount that customers are willing to pay for a package of measures (which is less than the sum of the components). This provides a value of £10 per domestic customer. We have followed a similar process for SMEs, which indicates they are willing to pay £81 per year..

Figure 1: SGN Domestic Investment Priorities



SGN Domestic Customers – n = 2,776

Produced by Impact Research Ltd in strict confidence

IMPACT

Figure 2: SGN SME Investment Priorities



SGN SME Customers – n = 439

Produced by Impact Research Ltd in strict confidence



Multiplying this across all consumers, and removing the cost of delivering provides us with an estimate of the consumer surplus that is generated through the environmental action plan once it is fully delivered.

We have assumed delivery of the environmental action plan over the GD2 period and that the benefits are maintained for the following 5 years, and consumers WTP during that period remains constant.

On this basis we estimate that the present value to current customers over the five years of the price control is £18m. For future customers we have estimated a value of £39m for the following five-year period. At a total of £57m this is lower than the NPV we estimated through the CBAs, which came to £78m.

### 1.5 Bespoke safety and reliability outputs

Ofgem’s guidance states that a CVP can be awarded for bringing forward bespoke outputs in aspects of service provision that are not currently reflected in the existing framework of outputs. Our business plan details a number of bespoke outputs we are proposing for GD2 which go above and beyond the baseline option as set out in the Sector methodology decision document, these are detailed in section 7.

The present value associated with the difference in costs between the preferred option in our plan and Ofgem’s baseline option is estimated to be worth £50m to customers in GD2. This is sum of the present value of the bespoke outputs where a CBA and engineering justification paper has been produced (ie it has a value of more than £0.5m). As such it does not capture the additional value associated with the increasing riser inspection rates and other less capital intensive projects.

### 1.6 Additional information and granularity of CBA information

When developing this plan, we have challenged our engineers to fully justify all points of major expenditure, with every project over £0.5m being justified. This compares to Ofgem’s guidance released in September that suggests a threshold of £2m for individual projects and £5m for programmes. As a result of this we have provided extensive and detailed engineer justifications for over 130 projects, of which only a half would have

---

been required under the Ofgem thresholds.

We consider that providing this level of detail and providing this high confidence in the robustness of our plan and the underlying supporting evidence has demonstrated greater efficiency and can support decision making in comparison across networks. As a result of having a lower threshold for CBAs we have captured £60m of investment under the CBA process than would otherwise have been the case. We consider this to provide a customer value of 5%.

On this basis we estimate that the present value to customers over the five years of the price control is £3m.

### **1.7 New services for vulnerable households - financial savings**

By working effectively with our stakeholders, we are able to drive better value from the funds used to address consumer vulnerability and go above and beyond the minimum required by Ofgem for our GD2 business plan.

As we set out in chapter 6 of the business plan, we have worked with stakeholders and co-created a long list of more than 20 initiatives that are fed into a tiered framework for the support of vulnerable customers. For the investment that is focused on the higher tiers, there is a direct and enduring financial benefit that arises from that intervention. We have assumed for the purposes of the CVP that this value endures for 5 years, although we would expect a greater benefit. For the lower tiers, whilst we are providing immediate support and advice, we anticipate that the benefit will be shorter lived and that it may only last a single heating season.

As such we anticipate that a year's investment of £1m, will generate direct saving for households of £3.3m a year for 5 years and will therefore have a present value of £9m. By investing £1m on an annual basis through-out GD2 we are able to generate a greater value.

On this basis we estimate that the present value to vulnerable customers is £40m.

### **1.8 New services for vulnerable households – social benefits**

In addition to the direct financial benefits that are set out in section 1.8 above there is an indirect social value associated with the intervention and from reducing someone's exposure to fuel poverty. Using social value bank metrics and relevant dead weights (a factor used to describe the likelihood that a benefit would have been realised without our intervention, because of the work of other organisations) we are able to understand the broader social value associated with the investment.

As such we anticipate that a year's investment of £1m, will generate social value of £17m a year. By investing £1m on an annual basis through-out GD2 we are able to generate a present value to vulnerable customers is £85m.

### **1.9 Community Action Projects**

We undertake community action projects where our staff are encouraged to utilise their time in supporting local charities and community actions projects. We have estimated the direct financial benefit and the social and environmental benefit associated with the projects.

The social bank value of volunteers impacting directly on the community is estimated at £63k per year whilst the social bank value estimate of the value of the project is £26k per year. Combined with the direct financial benefit of charitable contributions of approximately £0.5m a year, we create an annual value of £0.55m per year.

On this basis we estimate that the present value to current and future customers is £2.5m.

### **1.10 Innovation funding**

Ofgem's guidance states that a CVP can be awarded for an innovation strategy which is likely to drive forward energy system thinking and address consumer vulnerability. In our business plan we are proposing to invest in

---

both BAU innovation and to support non-BAU innovation with a 10% contribution. This 10% is incremental innovation funding provided directly by SGN's shareholder to support our innovation activity, resulting in a total spend of approximately £19m on innovation projects across GD2.

A study by Frontier Economics for the Department for Business, Innovation and Skills (BIS), now BEIS, found that there is strong evidence that private investments in innovation and R&D yield high private returns, of the order of 20-30%, and that social rates of return are typically two to three times larger than this.<sup>1</sup> This gives a range of social returns between 40% and 90%. Applying this to an annual innovation investment of £3.8m in GD2 gives an annual additional value of £3.4m.

On this basis we estimate that the value to future customers over the five years of GD2 investment is £31m.

## 1.11 Open data

Our Open Data plans go above and beyond the minimum required by Ofgem for our GD2 business plan. As Ofgem's guidance notes, proposals for sharing of data that can facilitate significant improvements in services offered to consumers could merit a CVP award. In June the Energy Data Taskforce published its proposed Strategy for a Modern Digitalised Energy System<sup>2</sup> – consistent with the recommendations of the taskforce, our GD2 plans take the first key steps towards making data more visible, more accurate, and more accessible.

The potential benefits of publishing our energy system data to drive enhanced collaborative innovation (analytical insights, Artificial Intelligence & Machine Learning solutions) have been well documented. However, quantifying the value of improving and opening up data is inherently challenging. In December 2017 a report published by the European Data Portal<sup>3</sup> and undertaken by Capgemini Consulting stated the following:

*On an aggregated level, although existing empirical estimates of the value of Open Data vary considerably in scope and outcome, they suggest that the value added associated with Open Data varies between roughly 0.4% and 1.58% of GDP.*

We recognise that this value is derived from a variety of sources (e.g. value is being created across multiple steps of a supply chain i.e. data suppliers -> data aggregators -> data developers/enrichers) and it is challenging to specifically identify the impact of open data by gas grids. However, to quantify our CVP we have estimated that, out of UK annual GDP (2018) of over £2tn, approximately £10bn is contributed from the gas sector. If we assume the low end of the Capgemini range of 0.4% impacts on GDP, and that this effect last for 3 years, then the value of open data could be up to £122m. We then assume our contribution to this is a conservative 2.5%, and there is a 95% deadweight factor (i.e. that 95% of the value would have been contributed by a different party if we had not been present).

On this basis we estimate that the present value to current and future customers is £2.7m.

## 1.12 Supporting decision making

Ofgem notes that a CVP could include the company's commitment to an above-BAU approach to sharing information and data with relevant parties to facilitate greater whole system coordination. Our plan includes a range of proposed activities which we will undertake around good engagement and effective information sharing with planning authorities to generate better outcomes for consumers.

As we have developed this plan, we have actively engaged with local authorities both with the planning departments and at the encouragement of our CEG with the strategic energy planning office. Sustaining this level of engagement as we progress through GD2 is important. We have dedicated an additional resource to

---

<sup>1</sup> Frontier Economics (2014), Rates of return to investment in science and innovation, p.135. [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/333006/bis-14-990-rates-of-return-to-investment-in-science-and-innovation-revised-final-report.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/333006/bis-14-990-rates-of-return-to-investment-in-science-and-innovation-revised-final-report.pdf)

<sup>2</sup> <https://es.catapult.org.uk/news/energy-data-taskforce-report/>

<sup>3</sup> [https://www.europeandataportal.eu/sites/default/files/analytical\\_report\\_n9\\_economic\\_benefits\\_of\\_open\\_data.pdf](https://www.europeandataportal.eu/sites/default/files/analytical_report_n9_economic_benefits_of_open_data.pdf)

---

supporting the local authority energy planning process, and the ongoing engagement through the price control period to support local decision making. Our engagement plans go above and beyond the Ofgem minimum requirements.

To estimate the value of this, we note that the Infrastructure and Projects Authority estimates a £47bn pipeline of investment in utility assets. If we assume that gas information is important in 10% of the projects identified (gas only investment accounts for 7% of the pipeline in isolation); that better information overall could lead to a 5% efficiency improvement; and that our high quality engagement can contribute to 2% of that value, the CVP is worth £5m.

On this basis we used the mid case and that the present value to current customers is £5m.

### 1.13 GSMR standards

The immediate benefit of our NIC project on Opening the Gas Markets, was the reduction in the costs associated with the SIUs. On the back of the evidence provided through the NIC project, we were able to successfully demonstrate the potential of the SIUs to operate under a wider gas specification than currently in place in the UK. As a result, we have not had to install new nitrogen ballasting plants that would have been required to maintain the gas specification to national UK standards.

By using this evidence base more fully, we think that it is reasonable to promote a change in GSMR standards at the national as well as the local SIU level.

Ofgem states that a CVP can be awarded in recognition of a GDN's commitment to an above-BAU approach to sharing information and data with relevant parties to facilitate greater whole system coordination. If we are successful in changing the standards, then there is a direct consumer value associated with the reduced cost of not having to ballast the imported natural gas, along with the associate environmental benefits. The national transmission operator has estimated that there could be the equivalent of a £325m<sup>4</sup> per year cost saving should ballasting be reduced.

If we assume that only 50% of those benefits are directly attributable to standard changes and that only 10% is directed attributable to us, then the discounted value over 10 years gives a CVP worth £135m. We have then taken the average, with a further scenario assuming only 25% of the values are directly attributable to 25% of the benefits, which generates a CVP of £68m.

Using a mid-point between the two, the present value to future customers of successfully delivering a change in GSMR standards in GD2 is £101m.

### 1.14 Hydrogen standards

In our business plan we are focusing our innovation strategy on understanding the standards that would be needed for a hydrogen rollout. This is a key requirement for the implementation of a hydrogen system, but is also an important input into the policymaking process around decarbonisation of heat.

Our research includes areas such as the minimum training required for gas safe registered engineers in a hydrogen system and identifying relevant safety requirements on the grid associated with a switch to hydrogen (see Chapter 13). Understanding what these minimum standards need to be – and the costs associated with them – will be an important part of the cost analysis for a hydrogen scenario.

Ofgem's guidance states that a CVP can be awarded in recognition of a GDN's commitment to an above-BAU

---

<sup>4</sup> <https://www.sgn.co.uk/sites/default/files/media-entities/documents/2019-07/SGN-Oban-Gas-Market-Report-Full-Report-2016.pdf>

---

approach to sharing information and data with relevant parties to facilitate greater whole system coordination; and an innovation strategy likely to drive forward energy system thinking. Our research in this area is likely to be a key input into system-wide co-ordination and decision making by policymakers.

There are three key areas of benefit to consumers from this work:

- **Option value today:** The first is a contribution to the value of being able to keep hydrogen as an option on the table. In order for hydrogen to remain a viable option at the point when policy decisions about decarbonisation of heat are made, there needs to be ongoing research into how a hydrogen system will be implemented. Better understanding of standards is a key part of the necessary research.
- **Decision point value:** At the point in time when policy decisions are made, for example if local areas are considering whether to develop hydrogen infrastructure or to push for greater electrification, a better understanding of the requirements and associated costs of each option will help policymakers make the right decision.
- **Roll-out value:** Finally, if hydrogen is pursued, a better understanding of the requirements and costs before starting the rollout process will help ensure that process happens more efficiently and will also contribute to effective planning and budgeting. As has been seen with other high profile infrastructure investments in the recent past (e.g. HS2 and Crossrail), a lack of a clear understanding of the costs of a major infrastructure project can lead to cost increases in the billions, which can jeopardise public support and call into question the viability and legitimacy of the project. Given the likely challenges, it will be essential to avoid such instances (or at least minimise the risk) when it comes to the decarbonisation of heat.

Clearly the consumer value of these benefits is difficult to quantify. We have therefore focused on quantifying the first key area, which is the value of retaining hydrogen as an option.

By using the comparison of different pathways set out in the Climate Change Committee report<sup>5</sup>, we are able to identify the alternative costs of different decarbonisation pathways and on this basis are able to identify the value associated with having an alternative option, even if we assume that there is an 80% probability of that pathway not being utilised. We then assume that our contribution to that value by focusing on the early development of standards is 5%.

On this basis the present value to future customers is £26m.

---

<sup>5</sup> <https://www.theccc.org.uk/wp-content/uploads/2018/06/Imperial-College-2018-Analysis-of-Alternative-UK-Heat-Decarbonisation-Pathways.pdf>