



Annex

**NGET_ET.07_Consumer Value
Proposition**

December 2019

As a part of the NGET Business Plan Submission

RIIO-T2 **nationalgrid**
Electricity Transmission

NGET_ET.07_Consumer Value Proposition
Cross Cutting
(December 2019)

Submission annex 2019

This is National Grid Electricity Transmission (NGET)’s 9 December 2019 annex on the consumer value proposition (CVP) in our RIIO-2 business plan. Our business plan provides a large amount of value to consumers in terms of facilitating the transition to the energy system of the future, making sure the electricity network is reliable and protected from external threats and caring for the environment and communities. The CVP only looks at those parts of our plan that go beyond Ofgem’s minimum requirements, go beyond business as usual activities and provide consumer value.

In this annex we explain what the CVP is, our proposed monetised CVPs and our qualitative CVPs that provide value for consumers but which we cannot monetise robustly. This annex is supplemented by the following documents:

- NGET ET.07A CVP snapshot table
- NGET ET.07B Frontier Economics CVP quantification methodology
- NGET ET.07C Frontier Economics CVP quantification spreadsheet

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1. What is the CVP?

Ofgem provided details of the consumer value proposition (CVP) in its 3 June, 9 September and 31 October 2019 business plan guidance documents.

Ofgem describes the CVP as:

“Under the CVP, Business Plans should set out the ways in which their plan goes beyond the minimum requirements and beyond the functions typically undertaken by an energy network company as business as usual and how this will lead to benefits for consumers.” (paragraph 5.13, page 50) [Ofgem’s 31 October 2019 business plan guidance](#)

We welcome the CVP because it helps show the value our plan provides for consumers. It fits well with our increased emphasis on engagement and openness in our RIIO-2 business plan. The CVP is only a small part of the consumer benefit of our business plan as we explain in the next section.

2. Categorising consumer benefit in our business plan

The consumer benefit of our business plan is much larger than the CVP.

2.1 - The huge consumer benefits of our core business

Our modern society depends on the electricity network for many crucial activities such as lighting, communications and refrigeration to name but three, meaning the benefit to consumers of our network and business plan is vast. Our business plan provides a large amount of value to consumers in terms of facilitating the transition to the energy system of the future, making sure the electricity network is reliable and protected from external threats and caring for the environment and communities.

For example, the independent ESO estimates that £515m of the investment in boundary capability we are making in our plan (88% of the total £586.7m investment that we will be made during the T2 period) delivers constraint costs savings for consumers ranging from £10bn to £40bn across its four Future Energy Scenarios (FES). This is a huge benefit to consumers, but it is not included in the CVP because it could be considered as “business as usual”.

2.2 - Efficiency savings

We are making commitments to £1.1bn of quantifiable efficiency savings in our business plan. However, Ofgem will assess these commitments as part of its cost assessment not as part of the CVP.

2.3 - The CVP: activities beyond the minimum requirements and business as usual that benefit consumers

The CVP looks at the value our plan provides above Ofgem’s minimum requirements and beyond the functions typically undertaken by an energy network company as business as usual.

Ofgem has asked that we attempt to monetise our CVP. For some areas of our business plan it can be difficult to monetise our CVP even if it is clear they do provide benefits for consumers. Reflecting this we have categorised our CVP into three layers.

Table 2.1 – The three layers of consumer value in our business plan

Layer	Type	Description
1	Monetised CVP	CVP items for which we have a robust methodology for estimating the monetised benefits for consumers. This is the focus of Ofgem's assessment and this annex.
2	Magnitude estimates of consumer value	Items for which we can provide an estimate of the magnitude of the benefits for consumers, but not a robust quantification. We chose to undertake this additional analysis because Citizens Advice thought it would be helpful.
3	Qualitative consumer value	Items that provide benefits for consumers, but for which we have not found it possible to robustly quantify or estimate the magnitude of the benefits.

Many of the activities that Ofgem suggests in its business plan guidance that companies could include in their CVP proposals (such as stakeholder engagement, innovation strategy and data sharing of information) are hard to monetise. Such activities form part of our qualitative consumer value.

3. Our approach to producing our CVP

Working with Frontier Economics we used the following approach to produce our CVP:

Table 3.1: Our approach to producing our CVP

Step number	Description
Step 1	We reviewed our draft business plan in detail and considered new, innovative proposals we could include to develop a complete list of CVP items that go beyond Ofgem's minimum business plan requirements and our business as usual activities.
Step 2	We produced a qualitative assessment of the consumer value in our draft CVP items.
We included the results of step 1 and 2 as annex ET.07 to our 1 October 2019 second draft business plan.	
Step 3	We discussed our qualitative assessment with key consumer representatives. Please see Appendix 1 to this annex for a summary of those discussions.
Step 4	We produced a short list of potentially quantifiable CVP items.
Step 5	We produced quantifications and justifications for our monetised CVP items.
Step 6	We engaged with our stakeholders and the independent stakeholder user group on our monetised CVP items.
Step 7	After taking account of stakeholder comments we reached our final list of monetised CVP items. This is annex focusses on the results of step 7.

4. The monetised CVP in our business plan

The table below provides an overview of our nine monetised CVP items.

Table 4.1 – Overview of our monetised CVP

Monetised CVP item	Summary of consumer value	Monetised value (£m)
CVP1 - Optimisation of harmonic filtering	We can save consumers money by changing the approach to harmonic filtering so that we carry it out rather than our customers.	18.82
CVP2 - Whole-system alternatives to reactor investments	We can save consumers money by finding alternative whole-system solutions to reactor investments to address reactive power issues.	16.62
CVP3 - Whole system approach to low-voltage substation re-builds	We can save consumers money by finding alternative whole-system solutions for managing faults at Grid Supply Points (GSPs).	9.48
CVP4 - Tougher energy not supplied (ENS) target	We are committing to a tougher energy not supplied target at no additional cost to consumers.	2.68
CVP5 - Caring for the natural environment	We are committing to improve the natural capital value of our non-operational land by 10% at no additional cost to consumers.	14.67
CVP6 - Supporting local urban communities	We are proposing a new, innovative scheme to improve our assets in urban areas.	22.58
CVP7 - Developing alternatives to SF ₆	We are proposing an innovation project to find an alternative for the SF ₆ insulation gas, which will reduce greenhouse gas emissions.	13.10
CVP8 – SO:TO optimisation	We are proposing an approach where we can offer flexible options to the ESO to enable it to reduce constraint and whole-system costs for consumers.	84.88
CVP9 – Deeside innovation centre	We are expanding and opening up our Deeside innovation centre to allow cross-sector research and trials of technologies to allow whole-system innovations to be applied more quickly.	26.13
Total CVP		208.96

The independent stakeholder group asked us to explain what the value of our CVP claim is compared with the 2% cap on the overall business plan incentive.

If we assume a 40% totex sharing factor in the T2 period then the maximum CVP reward we could receive would be: $0.4 * £208.96m = £83.58m$, which is 1.2% of our totex. This is well under the 2% cap on the overall business plan incentive.

Working with Frontier Economics our approach to monetisation was:

- We evaluated the benefits of each CVP item relative to a counterfactual scenario, determined on a case-by-case basis. The counterfactual is what we would expect a reasonably ambitious business to do.
- We calculated the benefits to consumers net of the costs associated with delivering those benefits.

- We calculated the net benefits in present value terms in 2018/19 prices, consistent with the price base for our business plan. We used the [HM Treasury Green book](#) social discount factor to calculate the net present value of the CVP items.

We have submitted Frontier Economics' CVP quantification methodology as Annex NGET ET.07B to our plan.

In the following pages we describe each of the nine items in more detail and explain how they meet Ofgem's criteria for the CVP. We list Ofgem's non-exhaustive list of CVP criteria in appendix 5.

Where we have described the views of stakeholders, these reflect our records of their views. For the definitive view of the independent stakeholder group on our CVP you should refer to their report on our business plan.

CVP1: Optimisation of harmonic filtering	
Net CVP value	£18.82m
Description of CVP item	<p>We can save whole-system costs for consumers by providing harmonic filtering centrally rather than new low-carbon generators having to do this individually, saving time, cost and effort for low-carbon generators and whole-system costs for consumers.</p> <p>This CVP item will require a change in the way we, the ESO and low-carbon generators operate. It might also require a change to the charging methodology to accommodate this approach.</p> <p>All future energy scenarios show an increasing amount of wind, solar, storage and interconnectors. Connecting these technologies to the system introduces distortions that can be damaging to customer's equipment at certain frequencies, known as harmonics. Limits on harmonic distortion levels are placed on developers of these technologies, often requiring them to invest in harmonic filtering equipment.</p> <p>Together with experts, and alongside other network companies, we have been investigating the potential consumer benefits of aggregating filtering requirements to reduce the total number of filters required. This approach would involve us responding to customer connection applications through the ESO and building any filtering requirements in place of developers, alongside other reinforcements required to connect. The modular nature and relatively short delivery lead time would allow for aggregation without stranding risk. For more details see section 5 of chapter 7.</p> <p>We propose that we could fund this approach through an uncertainty mechanism, UM7-6 harmonic filtering, which allows for a within period determination to fund a centralised approach. For more details of the UM see section 7 of chapter 7 and annex ET.12 on uncertainty mechanisms.</p> <p>We have received positive feedback from stakeholders on the potential benefits of our harmonic filtering proposal.</p>
Incentive properties of this CVP item	The industry change towards us providing harmonic filtering centrally involves us, the ESO and low-carbon generators changing our established practices and possibly a change to the charging methodology. If we are given a CVP payment for this CVP item, we commit to paying it back in proportion to any benefits we don't deliver. This CVP clawback mechanism will provide us with a strong incentive to work hard to secure the changes needed to deliver the consumer benefits of a coordinated approach to harmonic filtering.
Frontier Economics reference	ET2: Optimisation of harmonic filtering
Name in 1 October plan	Not included
How we meet Ofgem's assessment criteria for CVP1: Optimisation of harmonic filtering	
1. Additional to the minimum requirements	This CVP item involves an industry change towards us providing harmonic filtering centrally to wave whole-system costs. This is beyond the minimum requirements for our business plan.
2. Beyond business as usual	This CVP item involves an industry change towards us providing harmonic filtering centrally. It involves us, the ESO and low-carbon generators changing our established practices and possibly a change to the charging methodology.

<p>3. Incorporates consumers' expectations</p>	<p>In our engagement consumers say they have three main priorities. One of these is an affordable energy bill and another was a sustainable energy system. This CVP item meets consumers' expectations by lowering whole-system costs and making it cheaper and easier for low-carbon generators to connect to our network.</p>
<p>4. Support of challenge group and stakeholder group</p>	<p>This CVP was not included in our 1 October 2019 plan, so the challenge group has not seen it.</p> <p>At its meeting on 22 November 2019 the independent stakeholder group agreed that this CVP item is above business as usual. The group mentioned that our harmonic filtering proposal would reduce costs and entry barriers for low-carbon generators. It should lead to more standardisation of approaches to harmonics and help to further drive down the costs for new generator developers. It will lower the barriers to entry for new generators because there will be standard equipment for harmonic filtering and know before they start what the requirements are.</p> <p>Citizens Advice is supportive of this monetised CVP item (telecon on 13 November). Citizens Advice commented that as well as reducing whole system costs this proposal can speed up the connection process for low-carbon generators. Citizens Advice commented that the value will depend on how many connections we get during the T2 period, making our proposal for a clawback mechanism important (point 7 below).</p>
<p>5. Reasonable monetisation methodology</p>	<p>We commissioned Atkins to assess the benefits of harmonic filter ownership options. Atkins' final report finds that the net present value of the savings amount to approximately £18.82m for the T2 period. This is the CVP value we have used for this CVP item.</p> <p>£18.82m is the difference between the NPV cost of us providing harmonic filtering (cost = £48.03m) and our customers providing harmonic filtering (cost = £66.85m).</p> <p>For this CVP item Frontier Economics used Atkins' assessment.</p> <p>Annexes NGET ET.07B and NGET ET.07C provide Frontier Economics' quantification methodology and quantification spreadsheet.</p>
<p>6. Current, future and vulnerable consumers</p>	<p>We expect the £18.82m NPV of T2 whole-system cost savings to feed through to consumers through lower bills. This will benefit current consumers. Future consumers will benefit if this approach to harmonic filtering becomes standard leading to savings in the T3 period and beyond.</p>
<p>7. Arrangements for non-delivery</p>	<p>For the consumer value to arise requires that:</p> <ul style="list-style-type: none"> (a) we are successful in securing the required changes to industry practices and the charging methodology; and (b) the low-carbon generation that we expect to appear does appear in practice. <p>If we receive any reward for this CVP we propose to pay back to consumers the proportion of the reward reflecting any benefits we do not deliver.</p> <p>We will set up a reporting mechanism to capture information on delivery of the CVP items and we propose that we report on our progress to the independent stakeholder group.</p> <p>The CVP clawback mechanism will provide us with a strong incentive to work hard to secure the changes needed to deliver the consumer benefits of a coordinated approach to harmonic filtering.</p>

CVP2: Whole-system alternatives to reactor investments	
Net CVP value	£16.62m
Description of CVP item	<p>We have removed £184m worth of reactors from our baseline to allow us, the ESO and DNOs to identify the best whole-system solution for maintaining compliance with the Security and Quality of Supply Standards (SQSS) in relation to reactive power. This CVP item is a conservative estimate of how much this approach will save consumers.</p> <p>This CVP item will require a change in the way we, the ESO and the DNOs maintain compliance with the SQSS. It involves risk by taking a large amount of costs out of our plan and involves time, effort and cost for us to overcome the barriers to making alternative whole-system solutions happen.</p> <p>Reactive power is required for voltage control. As we transition to a decentralised and decarbonised electricity system, the ESO has indicated in its <u>Operability Strategy</u> document that it needs access to new sources of reactive power.</p> <p>Our analysis of SQSS requirements against the Common Energy Scenario indicates a potential need for 35 reactors across the network in England and Wales. We have agreed with the DNOs and the ESO that we will only include the costs of the most certain reactive investments in our baseline plan. These are five reactors at Osbaldwick, Monks Fryston, Birkenhead, Lackenby and Padiham.</p> <p>To accommodate alternative whole-system solutions we are proposing a new automatic uncertainty mechanism, which will provide a unit cost allowance when a transmission solution is identified through the whole-system process. We provide further information on this UM in section 7 of chapter 7 and in annex ET.12 uncertainty mechanisms.</p> <p>Taking this approach to reactor requirements has allowed us to reduce our baseline proposals by £184m (a reduction from 35 to 5 reactors) so that whole-system solutions can be identified and delivered in the T2 period for the benefit of consumers.</p> <p>For more details see section 5 of chapter 7.</p>
Incentive properties of this CVP item	<p>The changes needed to move the industry towards new sources of reactive power involve us, the ESO and the DNOs changing our established practices. It involves risk by taking a large amount of costs out of our plan and involves time, effort and cost for us to overcome the barriers to making alternative whole-system solutions happen.</p> <p>If we are given a CVP payment for this CVP item, we commit to paying it back in proportion to any benefits we don't deliver. This CVP clawback mechanism will provide us with a strong incentive to work hard to secure the changes needed to deliver new sources of reactive power.</p>
Frontier Economics name	ET4: Optimisation with DNOs to identify whole system opportunities
Name in 1 October plan	Part of CVP-3: Whole system approaches
How we meet Ofgem's assessment criteria for CVP2: Whole-system alternatives to reactor investments	
1. Additional to the minimum requirements	We are required to maintain compliance with the SQSS. The standard approach to achieving compliance is through investment in reactors.

	<p>This CVP item will require a change in the way we, the ESO and the DNOs maintain compliance with the SQSS in relation to reactive power. It involves risk by taking a large amount of costs out of our plan and involves time, effort and cost for us to overcome the barriers to making alternative whole-system solutions happen.</p>
2. Beyond business as usual	<p>Business as usual would involve us including £184m of additional reactor investment in our baseline plan to maintain compliance with the SQSS.</p> <p>This CVP item will require a change in the way we, the ESO and the DNOs maintain compliance with the SQSS in relation to reactive power. It involves risk by taking a large amount of costs out of our plan and involves time, effort and cost for us to overcome the barriers to making alternative whole-system solutions happen.</p>
3. Incorporates consumers' expectations	<p>In our engagement consumers say they have three main priorities. Two of these are an affordable energy bill and being able to use energy as and when they want it. This CVP item meets consumers' expectations by allowing for lower whole-system costs while complying with the SQSS in relation to reactive power.</p>
4. Support of challenge group and stakeholder group	<p>The challenge group did not comment specifically on this CVP in its letter of 25 October.</p>
	<p>At its meeting on 22 November 2019 the independent stakeholder group had mixed views on this CVP item. Some group members thought this type of whole-system approach, although novel, might be considered business as usual under the whole-system expectations of the RIIO-2 framework. Some of the attendees with this view supported the CVP item if the CVP and the associated clawback mechanism was the only way of incentivising the change to happen. Others group members thought this CVP item was a big change in approach, involved risk by taking costs out of the plan and time, effort and cost to overcome barriers to making it happen.</p>
	<p>Citizens Advice commented that it could see the benefits to consumers of this CVP item. For Citizens Advice, the main issue was whether this whole-system thinking proposal was an expectation under the RIIO-2 framework or goes beyond it.</p>
5. Reasonable monetisation methodology	<p>Frontier Economics has monetised this CVP item by taking the £184m we have removed from our plan and applying our conservative estimate of a 10% cost saving through using whole-system solutions. This generates a saving of £18.4m or £3.68m per year for five years. Frontier Economics discounted these savings back to 2019-20 giving a net CVP value for this item of £16.62m.</p> <p>Annexes NGET ET.07B and NGET ET.07C provide Frontier Economics' quantification methodology and quantification spreadsheet.</p>
6. Current, future and vulnerable consumers	<p>We expect the £16.62m NPV of T2 whole-system cost savings to feed through to consumers through lower bills. This will benefit current consumers. Future consumers will benefit if new whole-system approaches to complying with the SQSS in relation to reactive power become available and can be used in the T3 period and beyond.</p>
7. Arrangements for non-delivery	<p>For the consumer value to arise requires that the ESO, DNOs and we achieve savings through alternative whole-system solutions to investments in reactors.</p> <p>If we receive any reward for this CVP we propose to pay back to consumers the proportion of the reward reflecting any benefits we did not deliver.</p>

	<p>We will set up a reporting mechanism to capture information on delivery of the CVP items and we propose that we report on our progress to the independent stakeholder group.</p> <p>The changes needed to move the industry towards new sources of reactive power involve us, the ESO and the DNOs changing our established practices. It involves risk by taking a large amount of costs out of our plan and involves time, effort and cost for us to overcome the barriers to making alternative whole-system solutions happen.</p> <p>This CVP clawback mechanism will provide us with a strong incentive to work hard to secure the changes needed to deliver new sources of reactive power.</p>
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CVP3: Whole-system approach to low-voltage substation re-builds	
Net CVP value	£9.48m
Description of CVP item	<p>We have removed £105m worth of low-voltage substation re-builds from our baseline to allow us, the ESO and the DNOs to identify the best whole-system solutions for managing faults at Grid Supply Points (GSPs) due to increasing levels of decentralised generation. The CVP is a conservative estimate of how much this approach will save consumers.</p> <p>This CVP item will require a change in the way we, the ESO and the DNOs manage faults at GSPs due to increasing levels of decentralised generation. It involves risk by taking a large amount of costs out of our plan and involves time, effort and cost for us to overcome the barriers to making alternative whole-system solutions happen.</p> <p>The growing trend for decentralised generation can present fault level challenges at Grid Supply Points (GSPs) where we retain ownership of lower voltage assets (e.g. 132kV). Fault levels exceeding the rating of substation assets present a physical safety risk as well as a risk to security of supply. The default investment solution to resolve this is to replace the equipment that has reached its maximum capability with higher-rated equipment. In some cases, this continues to be the most effective, and the only potential solution. However, we have increasingly been looking to find a better way by working with DNOs and the ESO to determine if any non-build options can resolve fault level issues. These could include, for example, changes to running arrangements in either the transmission or distribution system.</p> <p>Our analysis identified a potential requirement to invest £105m through the T2 period on low-voltage substation re-builds due to higher fault levels associated with distributed generation. This requirement was included in the first draft of our business plan, which we discussed with DNOs. Through our collaboration and coordination with the DNOs, we have removed these costs from our baseline proposals.</p> <p>We are proposing a new uncertainty mechanism, UM8-3 low-voltage rebuild (embedded generation), to cover substation re-build costs we might incur if a transmission investment is later confirmed to be the best solution for consumers. We provide further details in section 7 of chapter 8 and annex ET.12 on uncertainty mechanisms.</p> <p>Removing these investments from our baseline allows us to work with relevant DNOs and the ESO, as more information becomes available, to determine what is needed and who is best to deliver to the overall benefit of consumers. An uncertainty mechanism facilitates this flexibility.</p> <p>Whilst alternative running arrangements can be effective, they normally represent a move towards a more complex network operating condition and can restrict capacity for further connections and increase future network access costs. If more distributed generation customers connect, the fault levels limits could be exceeded, and investment may be triggered.</p> <p>For more details see section 5 of chapter 8.</p>
Incentive properties of this CVP item	<p>The changes needed to move the industry towards whole-system solutions for managing faults at GSPs due to increasing levels of decentralised generation involve us, the ESO and the DNOs changing our established practices. It involves risk by taking a large amount of costs out of our plan and involves time, effort and cost for us to overcome the barriers to making alternative whole-system solutions happen.</p>

	If we are given a CVP payment for this CVP item, we commit to paying it back in proportion to any benefits we don't deliver. This CVP clawback mechanism will provide us with a strong incentive to work hard to secure the changes needed to deliver whole-system solutions for managing faults at GSPs due to increasing levels of decentralised generation.
Frontier Economics name	ET5: Driving efficiency through collaboration, competition and innovation
Name in 1 October plan	Not included
How we meet Ofgem's assessment criteria for CVP3: Whole-system approach to low-voltage substation re-builds	
1. Additional to the minimum requirements	<p>Fault levels exceeding the rating of substation assets present a physical safety risk as well as a risk to security of supply. The default investment solution to resolve this is to replace the equipment that has reached its maximum capability with higher-rated equipment. In some cases, this continues to be the most effective, and the only potential solution.</p> <p>This CVP item will require a change in the way we, the ESO and the DNOs manage faults at GSPs due to increasing levels of decentralised generation. It involves risk by taking a large amount of costs out of our plan and involves time, effort and cost for us to overcome the barriers to making alternative whole-system solutions happen.</p>
2. Beyond business as usual	<p>Business as usual would involve us including £105m of low-voltage substation re-builds in our baseline to manage faults at GSPs due to increasing levels of decentralised generation.</p> <p>This CVP item will require a change in the way we, the ESO and the DNOs manage faults at GSPs due to increasing levels of decentralised generation. It involves risk by taking a large amount of costs out of our plan and involves time, effort and cost for us to overcome the barriers to making alternative whole-system solutions happen.</p>
3. Incorporates consumers' expectations	In our engagement consumers say they have three main priorities. Two of these are an affordable energy bill and being able to use energy as and when they want it. This CVP item meets consumers' expectations by allowing for lower whole-system costs while also managing faults at GSPs.
4. Support of challenge group and stakeholder group	This CVP was not included in our 1 October plan, so the challenge group has not seen it.
	<p>At its meeting on 22 November 2019 the independent stakeholder group had mixed views on this CVP item, their views being the same as for CVP2. Some group members thought this type of whole-system approach, although novel, might be considered business as usual under the whole-system expectations of the RIIO-2 framework. Some of the attendees with this view supported the CVP item if the CVP and the associated clawback mechanism was the only way of incentivising the change to happen.</p> <p>Others group members thought this CVP item was a big change in approach, involved risk by taking costs out of the plan and time, effort and cost to overcome barriers to making it happen.</p> <p>Citizens Advice commented that it could see the benefits to consumers of this CVP item. For Citizens Advice, the main issue was whether this whole-system thinking proposal was an expectation under the RIIO-2 framework or goes beyond it.</p>

<p>5. Reasonable monetisation methodology</p>	<p>Frontier Economics has monetised this CVP item by taking the £105m we have removed from our plan and applying our conservative estimate of a 10% cost saving through using whole-system solutions. This generates a saving of £10.5m or £2.1m per year for five years. Frontier Economics discounted these savings back to 2019-20 giving a net CVP value for this item of £9.48m.</p> <p>Annexes NGET ET.07B and NGET ET.07C provide Frontier Economics' quantification methodology and quantification spreadsheet.</p>
<p>6. Current, future and vulnerable consumers</p>	<p>We expect the £9.48m NPV of T2 whole-system cost savings to feed through to consumers through lower bills. This will benefit current consumers. Future consumers will benefit if new whole-system approaches to manage faults at GSPs due to increasing levels of decentralised generation become available and can be used in the T3 period and beyond.</p>
<p>7. Arrangements for non-delivery</p>	<p>For the consumer value to arise requires that the ESO, DNOs and we achieve savings through alternative whole-system approaches to manage faults at GSPs due to increasing levels of decentralised generation. If we receive any reward for this CVP we propose to pay back to consumers the proportion of the reward reflecting any benefits we did not deliver.</p> <p>We will set up a reporting mechanism to capture information on delivery of the CVP items and we propose that we report on our progress to the independent stakeholder group.</p> <p>The changes needed to move the industry towards whole-system solutions for managing faults at GSPs due to increasing levels of decentralised generation involve us, the ESO and the DNOs changing our established practices. It involves risk by taking a large amount of costs out of our plan and involves time, effort and cost for us to overcome the barriers to making alternative whole-system solutions happen.</p> <p>The CVP clawback mechanism will provide us with a strong incentive to work hard to secure the changes needed to deliver whole-system solutions for managing faults at GSPs due to increasing levels of decentralised generation.</p>

CVP4: Tougher energy not supplied (ENS) target	
Net CVP value	£2.68m
Description of CVP item	<p>We are proposing a method for setting our ENS target in the T2 period, which, on current data, reduces our target by 45% at no extra costs to consumers. We consider that our stakeholders and consumers would expect an improvement in the ENS target for the T2 period, reflecting our good performance so far in the T1 period. This CVP item is the value of our stretching 45% reduction in our ENS target compared with an expected counterfactual of a 20% decrease in our target (both relative to our T1 target of 316MWh per year).</p> <p>Energy Not Supplied (ENS) is the primary output for electricity transmission reliability. We assess ENS by taking the data from our equipment and calculating the volumes of energy (MWh) that are not supplied to consumers as a result of faults or failures.</p> <p>The ENS incentive is intended to drive behaviours contributing to a reliable network. The incentive is designed to reward network companies for good performance and penalise them for a poor performance. Loss of supply events are rare, however the consequences are often of national importance. The downside measure is such that a single incident has the potential to offset several years accumulated incentive reward. The incentive uses the Value of Lost Load (VoLL) for consumers to calculate this reward and penalty.</p> <p>The ENS incentivises us to research and carry out innovative actions to reduce the risk of loss of supply events. We explain examples of innovative actions we have taken in the T1 period to reduce the risk of loss of supply event in annex A9.11 – ENS Incentive. The examples include:</p> <ul style="list-style-type: none"> • We used a specialised reduced-height pilling rig to install new foundations under existing live circuits allowing for a shorter double-circuit outage for the final transfer from an old tower to a new one. This solution successfully reduced demand at risk from 6 weeks or more to only 4 days. • We invested in new equipment (temporary protection units called DALEKS) to reduce standard emergency return to service (ERTS) times for protection replacement from 10 days to 24 hours. • Using innovative “barrier cones” to remove the need to take adjacent zones out of service when working on a gas zone in substations containing Gas Insulated Switchgear (GIS). This reduces the amount of demand at risk. <p>Because the nature of the electricity transmission network continues to evolve, ENS provides a continuing incentive for us to find new ways to reduce the risk of loss of supply events.</p>
Incentive properties of this CVP item	The CVP has provided us with an incentive to propose a tougher target for ENS during the T2 period.
Frontier Economics name	ET6: Tougher energy not supplied (ENS) target
Name in 1 October plan	CVP9-1: Reducing levels of energy not supplied
How we meet Ofgem’s assessment criteria for CVP4: Tougher energy not supplied (ENS) target	
1. Additional to the minimum requirements	In its sector-specific methodology statement – ET annex , Ofgem states for ENS “We expect RIIO-ET2 targets to be more challenging than that in RIIO-ET1 and reflect the improvements in performance observed in RIIO-ET1.” (paragraph 2.235). We are interpreting this minimum requirement as meaning our

	<p>methodology that results in a 20% reduction in our ENS target compared with the T1 period, based on current data.</p> <p>We are proposing a method for setting our ENS target in the T2 period, which, on current data, reduces our target by 45% at no extra costs to consumers. We consider that this is above the minimum requirements.</p>
<p>2. Beyond business as usual</p>	<p>We consider our proposal for a method for setting our ENS target in the T2 period, which, on current data, reduces our target by 45% at no extra costs to consumers goes beyond business as usual. As explained in the cell above, we consider our methodology that results in a 20% reduction in our ENS target compared with the T1 period, based on current data, represents a business-as-usual approach.</p>
<p>3. Incorporates consumers' expectations</p>	<p>In our engagement consumers say they have three main priorities. Two of these are that they want to use energy as and when they want to and they want an affordable energy bill.</p> <p>This CVP meets consumers' expectations by targeting lower amounts of energy not supplied and by increasing the penalty / reducing the reward for any given level of performance in the T2 period compared with the T1 period.</p>
<p>4. Support of challenge group and stakeholder group</p>	<p>The challenge group did not comment specifically on this CVP in its letter of 25 October.</p> <p>At its meeting on 22 November 2019 the independent stakeholder group acknowledged that this CVP item was an example Ofgem specifically mentioned as CVP and could see how a tougher target benefitted consumers. The group wanted us to provide a clear explanation about how the CVP items interacts with the ODI and how it still benefits consumers despite this interaction. We have done this in row 7 below.</p> <p>Citizens Advice commented that it was a reasonable assumption that the ENS target would get tougher in the T2 period because we had performed well. So we needed to take that into account for the counterfactual. Citizens Advice also wanted us to explain what additional activities we carry out because of the ENS incentive that are beyond business as usual (see 1 below).</p>
<p>5. Reasonable monetisation methodology</p>	<p>As discussed in the "description" section above we are proposing a method for setting our ENS target in the T2 period, which, on current data, reduces our target by 45% to 175MWh per year at no extra costs to consumers.</p> <p>We consider that our stakeholders and consumers would expect an improvement in the ENS target for the T2 period, reflecting our good performance so far in the T1 period. So, for the counterfactual we are proposing a 20% decrease in our target to 254MWh.</p> <p>Frontier Economics has monetised this CVP item by looking at the value consumers gain from a change in the target from 254MWh per year (approximately a 20% reduction on the current T1 target of 316MWh per year) to 175MWh per year (approximately a 45% reduction).</p> <p>Frontier Economics uses the current incentive rate (called the value of lost load or VoLL) of £16,000 per MWh and the current totex sharing factor to calculate the value to consumers of the reduction in the target from 254MWh to 175MWh.</p> <p>Frontier Economics discounted the annual savings back to 2019-20 giving a net CVP value for this item of £2.68m.</p>

	<p>Annexes NGET ET.07B and NGET ET.07C provide Frontier Economics' quantification methodology and quantification spreadsheet.</p>
<p>6. Current, future and vulnerable consumers</p>	<p>We expect the £2.68m NPV of T2 savings to feed through to consumers through fewer loss of supply events. This will benefit current consumers and consumers in vulnerable situations in particular, who might find it harder to cope in a power cut. Future consumers will also benefit from our tougher ENS target in the T2 period as it will set a benchmark for future ENS targets.</p>
<p>7. Arrangements for non-delivery</p>	<p>For this CVP item non-delivery or partial delivery occurs if Ofgem sets a less-demanding ENS target for us than our proposal. if we did receive a CVP reward for this CVP item and Ofgem set us a less-demanding ENS target we would pay back to consumers the CVP reward in proportion to the level of the target set. We think this is a very unlikely scenario because Ofgem determines both our CVP reward and ENS target and will take account of the interaction between them.</p> <p>Our stakeholder group asked us to explain the interaction between the CVP and the ODI for energy not supplied. The CVP is an incentive for us to propose a tougher target for ENS, which we have done. The ODI operates once the target is set to incentivise us to achieve and outperform the target. If we received a CVP reward for a tougher ENS target and then failed to achieve it during the T2 period, we would keep the CVP reward but would be penalised through the ODI. The ODI penalty would be higher at any given level of performance in the T2 period because of the tougher ENS target.</p>

CVP5: Caring for the natural environment	
Net CVP value	£14.67m
Description of CVP item	<p>We are committing to increasing the natural capital value of all our non-operational land by 10% during the T2 period at no additional cost to consumers. The commitment is from a 2020-21 baseline.</p> <p>We have enhanced around 380 hectares with a natural capital approach in the T1 period, so this commitment represents a step change up to all our sites, which cover around 2,800 hectares.</p> <p>The 2019 report by the RSPB called “The State of Nature”, suggested that the UK is one of the most nature-depleted countries in the world. The UK Government’s 25 Year Environmental Plan, published in January 2018, sets out a comprehensive long-term approach to protecting and enhancing the environment. The Natural Capital Committee’s recommendation to the UK Government calls for organisations to create their own register of natural capital that they are responsible and to maintain the quality and quantity of the assets listed.</p> <p>We own significant areas of land across the UK. If left unmaintained, natural habitats will depreciate with time. We will use our natural capital valuation tool to build a natural capital inventory of assets we own and are responsible for. We are committing to increase the value and resilience of our natural assets, to make sure they can deliver the ecosystem services that we and our wider beneficiaries need, in the most cost-effective way possible.</p>
Incentive properties of this CVP item	<p>The CVP item involves a step change to increasing the natural capital value of all our non-operational land by 10% during the T2 period at no additional cost to consumers.</p> <p>If we are given a CVP payment for this CVP item, we commit to paying it back in proportion to any benefits we don’t deliver. This CVP clawback mechanism will provide us with a strong incentive to work hard to deliver the 10% increase in natural capital value of all our non-operational land.</p>
Frontier Economics name	ET12: Caring for the natural environment
Name in 1 October plan	CVP11-4: Enhancing the natural environment
How we meet Ofgem’s assessment criteria for CVP5: Caring for the natural environment	
1. Additional to the minimum requirements	<p>We are committing to increasing the natural capital value of our non-operational land by 10% during the T2 period at no additional cost to consumers.</p> <p>We have had positive feedback from the Natural Capital Coalition that setting our baseline and achieving a 2% annual target is an ambitious first step for T2. There is a natural decline of habitats if left unmaintained and we are not excluding this decline from our target, making it tougher. Preventing depreciation requires a level of maintenance and a gain requires further intervention to achieve.</p> <p>The independent stakeholder group considers our 10% improvement target is more stretching than other organisations have and that our target stands out as good practice.</p>

<p>2. Beyond business as usual</p>	<p>The purpose of our commitment is to go beyond our business as usual and provide leadership in sustainability by championing a natural capital approach and improving our natural capital.</p> <p>As discussed in the box above we have had positive feedback from the Natural Capital Coalition that setting our baseline and achieving a 2% annual target is an ambitious first step for T2. Also, the independent stakeholder group considers our 10% improvement target is more stretching than other organisations have and that our target stands out as good practice.</p>
<p>3. Incorporates consumers' expectations</p>	<p>In our engagement consumers say they have three main priorities. One of these is that they want a sustainable energy system.</p> <p>This CVP item meets consumers' expectations by improving the natural environment at our non-operational land.</p>
<p>4. Support of challenge group and stakeholder group</p>	<p>In its letter of 25 October, the RII0-2 challenge group mentioned "proposals to support local communities through employment opportunities and improving assets or local spaces" as one of the three of our CVP areas where it thought we were "potentially delivering additional value".</p> <p>The independent stakeholder group considers our 10% improvement target is more stretching than other organisations have and that our target stands out as good practice.</p> <p>The group asked us to be clearer why this is a step up in performance from T1. We have explained above that it is because we are moving from improving around 380 hectares in the T1 period to 2,800 hectares in the T2 period.</p> <p>The group asked us to include some information on the costs of delivering site improvements, even though we are not asking consumers to pay for them. We estimate that our current sustainability project costs are approximately £500 per hectare, but these exclude overhead costs, which means the actual cost will be considerably higher.</p> <p>Citizens Advice asked us to be clearer on why a 10% improvement in natural capital value is stretching and why it is going beyond business-as-usual activities. (We have explained this in rows 1 and 2 above).</p> <p>Citizens Advice agreed with us using a 10-year NPV for the value of natural capital increases at our sites, rather than the more typical 30-year NPV, for the purposes of the CVP. This was in case we needed to pay back any CVP reward we receive.</p>
<p>5. Reasonable monetisation methodology</p>	<p>Frontier Economics used our information on the baseline natural capital value at 28 NGET sustainability sites covering 377 hectares. They used this to estimate a baseline value per hectare, which they applied to NGET's 2,798 hectares of non-operation land to create a total baseline value of £324m. A 10% increase in this value is £32.4m.</p> <p>Our estimates of natural capital values are 30-year NPV calculations in line with best practice. We considered that for CPV purposes, where any CVP reward might need to be clawed back, a 10-year NPV would be more appropriate. Frontier Economics adjusted the £32.4m by a factor of 45.2% based on the HM Treasury social time preference rate. This produced the CVP value of £14.67m.</p> <p>Annexes NGET ET.07B and NGET ET.07C provide Frontier Economics' quantification methodology and quantification spreadsheet.</p>

<p>6. Current, future and vulnerable consumers</p>	<p>We expect the £14.67m NPV to benefit consumers through better local environments on and around our non-operational land. This will directly benefit current and future consumers living or working close to the land improved and current and future consumers who care about the natural environment more generally.</p>
<p>7. Arrangements for non-delivery</p>	<p>This CVP item involves a step change to increasing the natural capital value of all our non-operational land by 10% during the T2 period at no additional cost to consumers.</p> <p>If we are given a CVP payment for this CVP item, we commit to paying it back in proportion to any benefits we don't deliver.</p> <p>We will set up a reporting mechanism to capture information on delivery of the CVP items and we propose that we report on our progress to the independent stakeholder group.</p> <p>This CVP clawback mechanism will provide us with a strong incentive to work hard to deliver the 10% increase in natural capital value of all our non-operational land.</p>

CVP6: Supporting local communities	
Net CVP value	£22.58m
Description of CVP item	<p>We are proposing a new and innovative, Urban Improvement Provision (UIP). The UIP is a £50m consumer-funded budget to improve our assets and close public spaces in disadvantaged urban areas. Our UIP proposal responds to a challenge from the independent stakeholder group for us to consider ways to support disadvantaged urban communities.</p> <p>We propose that the fund would be governed by an independent stakeholder group, consisting of regional representation and an independent chair. Projects would be proposed to the group for assessment. The projects will focus on the top 30% most deprived urban areas, measured by the index of multiple deprivation (IMD). These projects could include, for example, improving green spaces, substation screening or heating local sites from our transformers. The stakeholder-led panel based will make awards based on the proposals.</p> <p>Our proposal received strong support from consumers through our acceptability testing workshops on the basis that a relevant stakeholder panel approves the projects to be carried out and Ofgem approves the efficient costs of the projects. As a result, we consider the UIP commitment will add value for consumers as well as the communities that benefit directly. We will liaise with the Scottish TOs to assess whether this provision would also be relevant in Scotland.</p> <p>We propose a maximum pot size of £50m. We have calculated this provision based on the visual impact provision (VIP) pot size of £500m equalling £4.14 per average bill in the willingness to pay results for National Parks. Consumers were willing to pay a further £0.67 on their bill for visual improvements outside of National Parks. Across the three TOs this amounts to ~£86m in total with 58% of that relating to England and Wales or £50m.</p> <p>The UIP will only releases investment funds for these community projects if they are approved by a stakeholder-led panel. We propose that Ofgem will approve the efficient costs of the projects. The UIP will release funds through a re-opener uncertainty mechanism annually (UM11-3 Urban improvement provision). This approach will allow the stakeholder panel to reflect changing community priorities.</p>
Incentive properties of this CVP item	Setting up the UIP will involve creating a new stakeholder panel, with a robust approval process and creating a system to identify the best opportunities for improving our assets in urban areas. If we are given a CVP payment for this CVP item, we commit to paying it back in proportion to any benefits we don't deliver. This CVP clawback mechanism will provide us with a strong incentive to set up the UIP and the stakeholder panel, identify opportunities for supporting disadvantaged urban communities and carry out the projects approved by the panel.
Frontier Economics name	ET8: Supporting local communities
Name in 1 October plan	CVP11-6: Supporting local communities close to our construction projects.
How we meet Ofgem's assessment criteria for CVP6: Supporting local communities	
1. Additional to the minimum requirements	The UIP is a new and innovative proposal to support communities in disadvantaged urban areas, using an independent stakeholder panel to assess and approve projects. This goes beyond Ofgem's minimum requirements for our business plan.

<p>2. Beyond business as usual</p>	<p>The purpose of the UIP is to go beyond our business as usual and provide leadership in supporting communities in disadvantaged urban areas. The independent stakeholder group considers this is new and innovative and beyond our business as usual activities.</p>
<p>3. Incorporates consumers' expectations</p>	<p>We carried out a willingness to pay survey with consumers. As part of this survey, domestic electricity consumers were willing to pay up to £8.26 per consumer per year for our current level of community activities, with non-domestic customers willing to pay £19.23 per consumer per year. This shows that consumers support us carrying out activities to benefit local communities.</p> <p>Our proposal received strong support from consumers through our acceptability testing workshops on the basis that a relevant stakeholder panel approves the projects to be carried out and Ofgem approves the efficient costs of the projects.</p>
<p>4. Support of challenge group and stakeholder group</p>	<p>In its letter of 25 October, the challenge group mentioned “proposals to support local communities through employment opportunities and improving assets or local spaces” as one of the three of our CVP areas where it thought we were “potentially delivering additional value”.</p> <p>The UIP responds to a challenge from our independent stakeholder group to create a commitment to support disadvantaged urban communities. The independent stakeholder group considers the UIP is innovative and a good example of a creative CVP item.</p> <p>Citizens Advice thinks our work for communities is a good example of CVP, but we needed to be clear how our expenditure delivers benefits.</p>
<p>5. Reasonable monetisation methodology</p>	<p>For this CVP item we made the estimation. Frontier Economics has included our estimation in their papers for completeness.</p> <p>To calculate the consumer benefit for this CVP item we need to estimate the benefit the UIP projects will provide above their cost.</p> <p>Frontier Economics considers three examples of estimating the additional value:</p> <ol style="list-style-type: none"> 1) A conservative assumption that the UIP projects generate benefits equal to their costs. 2) A study for the water industry found a social benefit to cost ratio of 3.06:1 of community measures. 3) Our consumer willingness to pay study found that domestic electricity consumers were willing to pay up to £8.26 per consumer per year for NGET’s “current level of community activities”, while non-domestic electricity consumers were willing to pay £19.23 per consumer per year to support local communities. Multiplying these WTP estimates with the number of households and businesses, respectively in England and Wales over 5 years results in a total willingness to pay of £1.5bn across both domestic and non-domestic consumers. <p>The independent stakeholder group suggested applying a reasonably conservative benefits multiplier to calculate the benefits of the UIP. They expected the benefits of the UIP projects to be above cost, especially because a stakeholder-led panel would approve the projects to be funded.</p> <p>We have assumed a conservative benefits multiplier of 1.5 to 1, that is for every £1 we spend on a project it generates £1.50 of benefit. This multiplier is just under half the multiplier in the water sector and much lower than the multiplier our willingness to pay evidence suggests (in the order of 30:1, based on £1.5bn of benefits to £50m of expenditure on the UIP).</p>

	<p>This means the <u>net</u> consumer value of the UIP is 0.5 times its cost. We forecast expenditure on the UIP of £10m each year, or £5m of net benefit each year. Discounting the benefits back to 2019-20 gives a value of £22.58m</p> <p>Annexes NGET ET.07B and NGET ET.07C provide Frontier Economics' quantification methodology and quantification spreadsheet.</p>
<p>6. Current, future and vulnerable consumers</p>	<p>We expect the £22.58m NPV to benefit consumers, future consumers and vulnerable consumers. The benefits should accrue most directly to those consumers located in the urban areas where we are improving our assets or nearby public spaces. Given we are prioritising disadvantage urban areas we would expect many vulnerable consumers to benefit from these projects. Future consumers should benefit from the ongoing improvements in our assets and nearby public spaces.</p>
<p>7. Arrangements for non-delivery</p>	<p>Setting up the UIP will involve creating a new stakeholder panel, with a robust approval process and creating a system to identify the best opportunities for improving our assets in urban areas.</p> <p>If we are given a CVP payment for this CVP item, we commit to paying it back in proportion to any benefits we don't deliver. This CVP clawback mechanism will provide us with a strong incentive to set up the UIP and the stakeholder panel, identify opportunities for supporting disadvantaged urban communities and carry out the projects approved by the panel. We will set up a clear reporting procedure to enable measurement of how many and which projects have been delivered.</p>

CVP7: Developing alternatives to SF₆	
Net CVP value	£13.10m
Description of CVP item	<p>Our T2 programme of innovation includes a project on finding alternatives to SF₆ (a potent greenhouse gas). This project aims to deliver large reductions in carbon emissions that will benefit current and future consumers.</p> <p>This CVP item involves us investigating alternatives to SF₆ which can be retro-fitted, avoiding the need for more costly asset replacement. This area of research is challenging and time consuming, and implementing the results on the network could be complicated.</p> <p>If our innovation is successful, we will deliver lower greenhouse gas emissions, lower costs associated with the management of SF₆ and quicker availability of lower carbon products within the supply chain. If our innovation is successful, the benefits could be spread much more widely than our business.</p>
Incentive properties of this CVP item	<p>Finding alternatives to SF₆ would lead to a large step change in our carbon emissions with ongoing benefits for consumers and future consumers. However, this area of research is challenging and time consuming, and implementing its results on the network could be complicated.</p> <p>If we are given a CVP payment for this CVP item, we commit to paying it back in proportion to any benefits we don't deliver. This CVP clawback mechanism will provide us with a strong incentive to do all that we can to increase the chances of our innovation being successful.</p>
Frontier Economics name	ET14: Innovation in decarbonising materials and methods
Name in 1 October plan	Part of CVP12-2: Decarbonising future networks
How we meet Ofgem's assessment criteria for CVP7: Innovation in decarbonising materials and methods	
1. Additional to the minimum requirements	<p>Research into SF₆ alternatives is challenging and time consuming, and implementing its results on the network could be complicated.</p> <p>If we are successful, the benefits are potentially very large with the possibility of other electricity companies in the UK and globally being able to use the innovations to reduce their carbon emissions. This goes beyond Ofgem's minimum requirements for our business plan.</p>
2. Beyond business as usual	The purpose of our innovation project is to go beyond our business as usual approaches to find alternatives to the SF ₆ insulation gas. This area of research is challenging and time consuming, and implementing its results on the network could be complicated.
3. Incorporates consumers' expectations	In our engagement consumers say they have three main priorities. One of these is that they want a sustainable energy system. This CVP meets consumers' expectations by innovating with an aim of reducing our carbon emissions.
4. Support of challenge group and stakeholder group	In its letter of 25 October, the challenge group mentioned "providing leadership in sustainability" as one of the three of our CVP areas where it thought we were "potentially delivering additional value". We consider that innovating to find alternatives to the SF ₆ insulation gas represents providing leadership in sustainability.

	<p>At its meeting on 22 November 2019 the independent stakeholder group thought this was a very good example of us providing environmental leadership. The group thought the value to consumers of this CVP item would be well in excess of the value we had conservatively calculated.</p> <p>The group asked us to make sure our CVP item was not double-counting with the common SF₆ leakage incentive. We consider this CVP item does not overlap with the common SF₆ leakage incentive if we did find an alternative to SF₆ in the T2 period and started including it on our network the SF₆ leakage incentive would adjust our baseline to reflect this under the rules of the incentive.</p> <p>Citizens Advice agreed that this CVP item provides benefits to consumers and is what stakeholders want. However, Citizens Advice asked whether this is CVP goes beyond business as usual expectations of innovation. We consider that finding alternatives to SF₆ and developing carbon-free materials for construction are clearly beyond business as usual because they deliver whole system benefits and benefits beyond the T2 period.</p> <p>Citizens Advice also asked us to make sure that if our innovation was successful, we would not be double rewarded through the CVP and environmental ODIs. For the reasons explained in the row above there is no overlap between successful innovation to find alternative to SF₆ and the common SF₆ leakage incentive.</p>
<p>5. Reasonable monetisation methodology</p>	<p>Frontier Economics has taken a conservative approach to valuing the benefits of this innovation project reflecting that this area of research is challenging and time consuming, and implementing its results on the network could be complicated.</p> <p>The valuation uses the following three conservative assumptions:</p> <ol style="list-style-type: none"> 1) The carbon savings are delivered only from the start of T3 period. 2) Only 20% of the potential annual savings are realised in each year of T3. 3) There are no savings in price controls beyond T3. <p>Frontier Economics takes the potential annual CO₂ savings through development of SF₆ alternatives (tonnes) of 250,000, multiplies it by 20% and the non-traded carbon price (for 2018) for the five years of the T3 period. Frontier Economics then discounts this benefit to 2019-20 producing a value of £15.35m.</p> <p>We estimate the cost of our SF₆ innovation project is £2.5m over five years, which after discounting is £2.26m,</p> <p>Frontier Economics calculates the net value as: £15.35m - £2.26m = £13.10m (with a slight rounding effect).</p> <p>Annexes NGET ET.07B and NGET ET.07C provide Frontier Economics' quantification methodology and quantification spreadsheet.</p>
<p>6. Current, future and vulnerable consumers</p>	<p>We expect the £13.10m NPV of benefits to feed through to consumers through lower carbon emissions. The lower emissions in the T3 period (and probably beyond) will benefit future consumers.</p>
<p>7. Arrangements for non-delivery</p>	<p>Finding alternatives to SF₆ would lead to a large step change in our carbon emissions with ongoing benefits for consumers and future consumers. However, this area of research is challenging and time consuming, and implementing its results on the network could be complicated.</p>

	<p>If we are given a CVP payment for this CVP item, we commit to paying it back in proportion to any benefits we don't deliver.</p> <p>We will set up a reporting mechanism to capture information on delivery of the CVP items and we propose that we report on our progress to the independent stakeholder group.</p> <p>This CVP clawback mechanism will provide us with a strong incentive to do all that we can to increase the chances of our innovation being successful.</p>
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CVP8: Optimisation with ESO to reduce whole-system costs	
Net CVP value	£84.88m
Description of CVP item	<p>Annual constraint costs are running at more than £500m per year and are on an upward trend. We are proposing a market-based mechanism to offer more flexible and enhanced services to the electricity system operator (ESO) to enable it reduce constraint costs and by doing so reduce whole-system costs for consumers.</p> <p>Transmission owners (TOs) can provide flexible services to the ESO under the existing Network Access Procedure (NAP). However, we consider the NAP delivers only a fraction of the potential consumer benefit available because: (1) it only allows for the recovery of costs incurred and does not compensate TOs for the additional risk they take in providing innovative services; (2) and the TOs have a strong incentive to minimise their costs in the regulatory framework, through the totex incentive mechanism (TIM), and the flexible services they could provide to the ESO increase their costs.</p> <p>In our business plan, we propose that the TOs will be able to offer the ESO a flexible range of delivery services when we take network outages. For example, rescheduling or accelerating timescales for delivery, providing alternative contracting, maintenance and construction activities, and working practices which otherwise would not be available. The ESO would market test the suitability of these services against a range of alternative options and select the most economic one for solving the system's balancing and/or operability need.</p> <p>The opportunity for TOs to earn a market rate for the extra cost and risk of delivering these services would provide a strong incentive for them to discover whole-system solutions to reduce consumer costs. It will counter the incentive for a TO to minimise its own costs in isolation, not taking account of whole-system costs.</p> <p>Our market-based approach could be implemented in parallel with the existing NAP at no additional cost to consumers. Our proposal adds another tool into the ESO's toolkit for operating a net-zero carbon system by 2025 and managing system constraint costs. We are not asking for any revenue for this proposal in our baseline plan.</p> <p>The introduction of this TO flexibility approach would lead to a larger market for services, increase competition and ultimately lower costs to consumers of operating the network. Depending on the scope of the scheme (i.e. how much of the network it covers), we estimate through our analysis of published constraint costs estimates it could reduce whole system costs by up to £188m each year.</p> <p>We have been engaging with the ESO, the other TOs and Ofgem about our proposal over the last year to understand how we can make it work in practice and what the implications will be for each of those organisations.</p>
Incentive properties of this CVP item	<p>We consider our ESO:TO proposal can unlock a large amount of benefits for consumers. It will involve a change in how we and the ESO interact, the services we provide and the services the ESO procures. It will involve time, effort and risk-taking by us to change how our business operates to provide these flexible services to the ESO.</p> <p>If we are given a CVP payment for this CVP item, we commit to paying it back in proportion to any benefits we don't deliver. This CVP clawback mechanism will provide us with a strong incentive to develop and implement our ESO:TO proposal to unlock the benefits for consumers.</p>

Frontier Economics name	ET3: Optimisation with ESO to reduce system costs
Name in 1 October plan	Part of CVP7-3: Whole system approaches
How we meet Ofgem’s assessment criteria for CVP8: Optimisation with ESO to reduce whole-system costs	
1. Additional to the minimum requirements	We are proposing to offer the ESO a flexible range of delivery services when we take network outages. For example, rescheduling or accelerating timescales for delivery, providing alternative contracting, maintenance and construction activities, and working practices which otherwise would not be available. This is beyond the minimum requirements of the Network Access Policy (NAP).
2. Beyond business as usual	We are proposing to offer the ESO a flexible range of delivery services when we take network outages (as described in the row above). This is beyond the business-as-usual services that we currently provide to the ESO.
3. Incorporates consumers’ expectations	In our engagement consumers say they have three main priorities. One of these is an affordable energy bill. This CVP meets consumers’ expectations by allowing for lower whole system costs.
4. Support of challenge group and stakeholder group	The challenge group did not comment specifically on this CVP in its letter of 25 October.
	At its meeting on 22 November 2019 the independent stakeholder group agreed this CVP is above business as usual. The group wanted us to include more detail in our write up about what new services we would be providing and the changes we are proactively pursuing. (We have done this above.) Citizens Advice commented that the level of benefit was uncertain and that we might want to move this item out of our monetised CVP and make it a magnitude estimate instead. Citizens Advice also commented that if we had yet to convince the ESO about the proposal the benefits might not materialise in the T2 period.
5. Reasonable monetisation methodology	<p>Frontier Economics has monetised this CVP item by taking our estimate of £188m of annual savings each year and applying it to the T2 period. This is a conservative assumption because we would expect the benefits of this approach to last beyond the T2 period and maybe increase in annual value.</p> <p>We estimated the £188m constraint cost saving by looking at the top ten Main Interconnected Transmission System (MITS) constraints causing outages in 2017/18. We assumed 25% of days of constraints would happen anyway, because it would not be possible or efficient to reduce constraint costs to zero. For the remaining 75% of days, we assumed TO flexibility would allow the ESO to remove the constraints at an average TO cost of £250k/day. This allowed us to calculate the potential constraint cost savings. To adjust the data to 2018/19 we extrapolated for the overall increase in constraint costs since 2017/18. This extrapolation gave us a total figure of £188m for potential constraint cost savings per year. Our proposal has additional benefits from “getting more from the existing network”, but our analysis of these benefits is several years old so, to be conservative, we decided not to include them in our estimate of potential constraint cost savings.</p> <p>After discounting the annual £188m of potential benefit over 5 years produces an NPV of £848m.</p> <p>Frontier Economics has used our conservative assumption that we might only be able to unlock 10% of the savings each year on average over the T2 period as we implement it and scale it up. This produces a CVP of £84.88m.</p>

	<p>We are not asking for any costs in our baseline for our market-based mechanism, so there are no costs to deduct from this value.</p> <p>Annexes NGET ET.07B and NGET ET.07C provide Frontier Economics' quantification methodology and quantification spreadsheet.</p>
<p>6. Current, future and vulnerable consumers</p>	<p>We expect the £84.88m NPV of T2 savings to benefit consumers through lower bills. This will benefit current consumers. Future consumers will benefit if this approach to ESO:TO optimisation continues in the T3 period and beyond.</p>
<p>7. Arrangements for non-delivery</p>	<p>We consider our ESO:TO proposal can unlock a large amount of benefits for consumers. It will involve a change in how we and the ESO interact, the services we provide and the services the ESO procures. It will involve time, effort and risk-taking by us to change how our business operates to provide these flexible services to the ESO.</p> <p>If we are given a CVP payment for this CVP item, we commit to paying it back in proportion to any benefits we don't deliver. This CVP clawback mechanism will provide us with a strong incentive to develop and implement our ESO:TO proposal to unlock the benefits for consumers.</p> <p>We will set up a reporting mechanism to capture information on delivery of the CVP items and we propose that we report on our progress to the independent stakeholder group.</p>

CVP9: Deeside centre for innovation	
Net CVP value	£26.13m
Description of CVP item	<p>The Deeside Centre for Innovation is a unique facility that enables innovation that will provides benefits in the T1, T2, T3 periods and beyond. It is open for the industry, and is pivotal in enabling the future transition of energy to net zero.</p> <p>The centre’s cross-sector Technology Advisory Board consists of transmission and distribution companies in the UK and academic partners. It makes sure we have an independent board representing the views of all stakeholders and new market entrants.</p> <p>In the T2 period:</p> <ul style="list-style-type: none"> • We will collaborate with other network companies and expand the facility, allowing the facility to be truly whole system and not just for electricity. • We will include a facility to trial gas (hydrogen and liquefied natural gas) integration, electric transport technologies and zero-carbon generation technologies. • We will open up the facility to small and medium-sized enterprises (SMEs). • We will be transparent about the activities at Deeside, to allow all parties to share and collaborate regardless of fuel or network. <p>This approach will enable the faster implementation of newer low-carbon technologies and reduce costs through quicker and safer ‘off-line’ testing and commissioning.</p>
Incentive properties of this CVP item	<p>Our proposals for expanding and improving collaboration at the Deeside Centre for Innovation will significantly increase the benefits for consumers in terms of the faster implementation of newer low-carbon technologies and reducing costs through quicker and safer ‘off-line’ testing and commissioning.</p> <p>If we are given a CVP payment for this CVP item, we commit to paying it back in proportion to any benefits we don’t deliver. This CVP clawback mechanism will provide us with a strong incentive to expand and improve collaboration at the Deeside Centre for Innovation, unlocking the associated benefits for consumers.</p>
Frontier Economics name	ET15: Deeside Centre for Innovation
Name in 1 October plan	Part of CVP12-2: Decarbonising future networks
How we meet Ofgem’s assessment criteria for CVP9: Deeside centre for innovation	
1. Additional to the minimum requirements	We are making innovative proposals to open up and expand the scope of the Deeside Centre for Innovation to increase the benefits it can deliver for consumers, as described above. This goes beyond the minimum requirements for our business plan.
2. Beyond business as usual	The Deeside Centre for Innovation is a unique facility that goes beyond business as usual. For the T2 period we are making innovative proposals to open up and expand the scope of the Deeside Centre for Innovation to increase the benefits it can deliver for consumers. Our proposals go beyond business as usual.
3. Incorporates consumers’ expectations	In our engagement consumers say they have three main priorities. Two of these are an affordable energy bill and wanting a sustainable energy system. This CVP item meets consumers’ expectations by enabling the faster implementation of newer low-carbon technologies and reducing costs through quicker and safer ‘off-line’ testing and commissioning.

<p>4. Support of challenge group and stakeholder group</p>	<p>The challenge group did not comment specifically on this CVP in its letter of 25 October.</p> <p>A member of the independent stakeholder group suggested that our approach to the Deeside Centre for Innovation was creative and would be worth including in our CVP.</p> <p>We did not discuss this CVP item with Citizens Advice as we included it on our CVP following the suggestion by a member of our panel, which came after we spoke to Citizens Advice.</p>
<p>5. Reasonable monetisation methodology</p>	<p>For this CVP item we made the estimation. Frontier Economics has included our estimation in their papers for completeness.</p> <p>We estimate the benefits of the Deeside Innovation Centre in the T1 period are £56m by allowing us to roll out innovation much more quickly than we previously experienced. We adjust this value for the different lengths of the T1 and T2 periods (8 years versus 5 years). We consider the benefits of the Deeside Innovation Centre are going to become fully apparent in the T3 period when the centre is complete.</p> <p>We conservatively assume that the benefits of the Deeside Innovation Centre will only occur in the T3 period and conservatively assume that the annual benefits in the T3 period will only be twice the annual benefits that have already occurred in the T1 period, even though the centre will be complete and open to other organisations. We calculate an NPV benefit of £53.22m.</p> <p>We have costs of £30m for the Deeside Innovation Centre in baseline for the T2 period. After discounting these costs are £27.09m.</p> <p>The net benefit for this CVP item is therefore £26.13m.</p> <p>Annexes NGET ET.07B and NGET ET.07C provide Frontier Economics' quantification methodology and quantification spreadsheet.</p>
<p>6. Current, future and vulnerable consumers</p>	<p>We expect the £26.13m NPV to benefit consumers and future through lower bills and lower carbon emissions.</p>
<p>7. Arrangements for non-delivery</p>	<p>Our proposals for expanding and improving collaboration at the Deeside Centre for Innovation will significantly increase the benefits for consumers in terms of the faster implementation of newer low-carbon technologies and reducing costs through quicker and safer 'off-line' testing and commissioning.</p> <p>If we are given a CVP payment for this CVP item, we commit to paying it back in proportion to any benefits we don't deliver. This CVP clawback mechanism will provide us with a strong incentive to expand and improve collaboration at the Deeside Centre for Innovation, unlocking the associated benefits for consumers.</p> <p>We will set up a reporting mechanism to capture information on delivery of the CVP items and we propose that we report on our progress to the independent stakeholder group.</p>

Appendix 1: Stakeholder engagement on our CVP

This appendix reflects our records of stakeholders' views. For the definitive view of the independent stakeholder group on our CVP you should refer to their report on our business plan.

Major Energy Users' Council (MEUC)	Date: 8 October 2019
<p>On 15 October we discussed our draft qualitative CVP from our 1 October draft business plan with Eddie Proffitt from the Major Energy Users' Council (MEUC).</p> <p>MEUC noted that the CVP was more difficult for transmission companies to measure than distribution companies because typically we have much less direct interaction with end consumers. MEUC recognised there were several areas where we do add value for end consumers beyond Ofgem's minimum requirements. MEUC concluded that by taking a broad approach we had captured a good range of proposals to consider.</p> <p>MEUC thought there were some areas not suitable for the CVP because the benefit was reputational and we should not try to claim the value back e.g. providing free energy resilience advice to key services, using carbon offsetting or improving our safety further.</p> <p>From the discussion it became clear there were opportunities to monetise the CVP such as carbon reduction and reducing electricity network constraint costs.</p> <p>For transparency, MEUC thought we would need to adopt approaches such as online support on websites to be going beyond the minimum requirements.</p> <p>MEUC thought open data sharing had the potential to be significantly value adding. We could adopt innovative approaches and should look to other sectors for best practice. By simplifying how other parties can access the data we could be innovative and add real value.</p> <p>On supply chain best practice, MEUC recognised the value of these initiatives, but thought it would be difficult to quantify the consumer benefit.</p>	

Stakeholder Group meeting 11	10 October 2019
<p>On 15 October we discussed our draft qualitative CVP from our 1 October draft business plan with the independent stakeholder group. We covered what the CVP is, the approach we had taken to identifying our CVP items, some examples of CVP items and the next steps we were proposing to produce monetised CVPs.</p> <p>The stakeholder group welcomed the update and the work we had done on our CVP up to then. They noted some of the challenges with monetising the benefits, including for the three areas the RIIO-2 challenge group had highlighted as potentially providing value in its letter of 25 October.</p> <p>The stakeholder group assigned two "buddies" to consider our monetised CVP in early November when we had a draft available. The two buddies were: Eddie Proffitt from the Major Energy Users' Council (MEUC) and Caroline Bragg from the Association for Decentralised Energy.</p> <p>We agreed that we would return to the stakeholder group on 22 November to discuss our monetised CVP.</p>	

Citizens Advice	Date: 15 October 2019
<p>On 15 October we discussed our draft qualitative CVP from our 1 October draft business plan with James Kerr from Citizens Advice.</p> <p>Citizens Advice welcomed the opportunity to see our draft CVP and discuss it in detail. Citizens Advice felt that we had identified a good range of CVPs from our activities. However, Citizens Advice considered our CVPs needed more justification as to how they go above the minimum and how they reflect what consumers value. Citizens Advice also asked that we explain very clearly for our final CVP examples how they benefit consumers and provide clear calculations for the monetisation. Citizens Advice made two further specific observations:</p> <ul style="list-style-type: none"> • “We would expect monetisation to be based on a) WTP values their research identified, and b) Social Return on Investment calculations. For these you can use values recognised by Government (look at the Green Book), or recognised values in the industry such as Value of Lost Load. When doing so, spell out all assumptions made and provide Ofgem with all values used for calculation. • It is unclear how Ofgem will treat activities which you are already delivering and whether they will count towards delivering value. It would therefore be helpful to be clearer whether you are already undertaking activities described in the CVP, and if so, will you a) do even more of that activity or the same level, and b) will you do so at the same or a reduced cost to consumers?” <p>We have included Citizens Advice’s specific comments on the individual CVPs in sections 4, 5 and 6 of this annex.</p>	

Stakeholder Group “buddies” telecon	6 November 2019
<p>On 6 November we had a telecon with our two stakeholder group “buddies” for the CVP: Eddie Proffitt from the Major Energy Users’ Council (MEUC) and Caroline Bragg from the Association for Decentralised Energy.</p> <p>We talked the buddies through our draft monetised CVP items to understand their views and feedback. The stakeholder group buddies challenged us on the detail of the specific monetised CVPs as follows:</p> <p><u>Optimisation of harmonic filtering</u> - The stakeholder group buddies challenged us on whether the correct counter-factual was no change in how harmonic filtering is provided. We considered it was the right counter-factual because that is what the market codes require.</p> <p><u>Optimisation with ESO to reduce system costs</u> – The stakeholder group buddies understood the value of our proposal. They agreed with our proposal not to claim the value through the CVP, but to seek to unlock the consumer value through a market-based approach.</p> <p><u>Optimisation with DNOs to identify whole system opportunities (reactors)</u> <u>Whole system approach to low-voltage substation re-builds</u> For both of these CVP items the stakeholder group buddies said we needed to provide information on what the savings would be or why the 10% savings assumption was conservative.</p> <p><u>Tougher energy not supplied (ENS) target</u> - The stakeholder group buddies could see the pros and cons of claiming or not claiming the CVP for a tougher ENS target.</p> <p><u>Carbon emission reductions</u> - The stakeholder group buddies asked how we take account of EU ETS payments and whether we would make some savings through lower payments. We checked and it is generators who make EU ETS payments not us. We mentioned at the meeting that the £6m value for this CVP would probably reduce to £1m or less and this is what has now happened.</p>	

Caring for the natural environment - The stakeholder group buddies thought this CVP item looked appropriate. They agreed with our proposal to only claim the 10-year NPV of the benefits, rather than the more typical 30-year NPV, in case we received a CVP reward that we subsequently needed to pay back.

Supporting local communities – The stakeholder group buddies agreed we should be conservative with how we value the benefits of our activities. The stakeholder group buddies commented this is an example of benefits to consumers funded by shareholders with no cost to consumers, although shareholders and the company do enjoy reputational benefits from the activities.

Innovation in decarbonising materials and methods – The stakeholder group buddies asked us to make sure this CVP item doesn't overlap with the SF₆ incentive. We considered this would not be an issue for the T2 period because we did not expect the innovation to start delivering alternatives to SF₆ on our network until the start of the T3 period.

A new CVP to encourage efficient consented projects – We discussed with the stakeholder group buddies an idea of using the CVP to encourage us to deliver efficient consented projects for late competition projects. The buddies asked whether we have an incentive to produce efficient consented projects anyway because of regulatory action if we didn't or if we have to complete the projects ourselves. They did see the benefit to consumers of efficient consented projects that keep the whole project costs down. The buddies thought we would need to further development work to make this a convincing CVP.

We agreed that we would circulate our updated CVP annex and Frontier Economics' methodology to the stakeholder group the following week ahead of the next stakeholder group meeting on 22 November.

Citizens Advice telecon	13 November 2019
<p>On 13 November we discussed our draft monetised CVP for our final business plan with James Kerr from Citizens Advice.</p> <p>Citizens Advice commented that it looked like we had worked hard over the last few weeks to provide more detail on our CVP, provide robust quantifications for our monetised CVP and address Citizens Advice's specific comments on individual CVP items.</p> <p>We went through our monetised CVP examples in detail and we have included Citizens Advice's comments in section 4 of this annex.</p>	

Stakeholder Group meeting 12	22 November 2019
<p>On 22 November 2019 we discussed our draft final monetised CVP and overall approach to the CVP with the independent stakeholder group.</p> <p>We went through our monetised CVP items in detail and we have included the stakeholder group's comments on each monetised CVP item in section 4 of the annex.</p> <p>The general comments the group made were:</p> <ul style="list-style-type: none"> • We need to explain and justify the period over which we have calculated benefits. • We need to explain in more detail how we will pay back any rewards if we do not deliver the CVP in practice. • We need to be clear where there is any potential double counting with ODIs. • We need to explain and justify the counterfactual we are using and why it is not business as usual. • We need to put more emphasis on the monetised CVP, rather than the qualitative CVP. • We need to be clear exactly what is in our CVP. 	

- We need to explain what the value of our CVP claim is compared with the 2% cap on the overall business plan incentive.

We have taken account of these comments in our final CVP.

Appendix 2 – Alignment of CVPs to the draft CVP from our 1 October 2019 draft business plan

In this table we use the prefixes:

- CVP for the nine monetised CVP items.
- ME for magnitude estimates of consumer value items.
- Q for qualitative consumer value items.

October business plan draft CVP	9 December final CVP	CVP or not
CVP6-1: Further improving our stakeholder and consumer engagement	Q6-1: Further improving our stakeholder and consumer engagement	Qualitative
CVP7-1: Facilitating changes in the energy market	Dropped because this could be considered business as usual.	Not applicable
CVP7-2: Innovation and competition to reduce the cost of the energy transition	Q7-1: Innovation and competition to reduce the cost of the energy transition	Qualitative
CVP7-3: Whole system approaches	CVP2 - Whole-system alternatives to reactor investments	Monetised CVP
	CVP8 – SO:TO optimisation	Monetised CVP
CVP7-4: Anticipatory investment thought leadership	Q7-2: Anticipatory investment thought leadership	Qualitative
CVP7-5: Uncertainty mechanisms	Q7-3: Uncertainty mechanisms	Qualitative
CVP8-1: Ensuring an effortless end-to-end customer experience	Q8-1: Ensuring an effortless end-to-end customer experience	Qualitative
CVP8-2: Making connections more quickly in the T2 period	Q8-2: Making connections more quickly in the T2 period	Qualitative
CVP8-3: Improving the system access experience	Q8-3: Improving the system access experience	Qualitative
CVP8-4: Improve the stability and predictability of our charges	Q8-4: Improving the stability and predictability of our charges	Qualitative
CVP9-1: Reducing levels of energy not supplied	CVP4 - Tougher energy not supplied (ENS) target	Monetised CVP
CVP9-2: Improving our excellent safety record	Dropped because this could be considered business as usual.	Not applicable
CVP9-3: Maintaining a reliable service that consumers value highly	Dropped because this could be considered business as usual.	Not applicable
CVP10-1: Improving the environment when enhancing protection at sites	ME1 – Adding environmental value to flood protection sites	Magnitude estimate
CVP11-1: Reducing our carbon emissions	Q11-1: Reducing our carbon emissions	Qualitative
	ME2 - Carbon emission reductions	Monetised
CVP11-2: Encouraging our supply chain to reduce its carbon emissions	Q11-2: Encouraging our supply chain to reduce its carbon emissions	Qualitative
CVP11-3: Providing leadership on sustainability	Q11-3: Providing leadership on sustainability	Qualitative
CVP11-4: Enhancing the natural environment	Q11-4: Delivering net gain on our construction projects	Qualitative
	CVP5: Caring for the natural environment	Monetised CVP
CVP11-5: Preserving precious resources	Q11-5: Preserving precious resources	Qualitative

CVP11-6: Supporting local communities close to our construction projects	Dropped because the independent stakeholder group did not think our activities were sufficiently new compared with T1.	Not applicable
CVP11-7: Supporting disadvantaged urban communities close to our assets	CVP6 - Supporting local urban communities	Monetised CVP
CVP11-8: Providing free energy resilience advice to key services	No longer in our plan because this duplicates the work of other network companies.	Not applicable
CVP11-9: Promoting workforce diversity	Dropped because it is not clear that this provides value for end consumers.	Not applicable
CVP11-10: Promoting supply chain best practice	Q11-6: Promoting supply chain best practice	Qualitative
CVP12-1: Further embedding a culture of innovation	Q12-1: Further embedding a culture of innovation	Qualitative
CVP12-2: Decarbonising future networks	CVP7 - Developing alternatives to SF ₆	Monetised CVP
	CVP9 – Deeside innovation centre	Monetised CVP
CVP12-3: Creating a positive social impact	Q12-2: Creating a positive social impact	Qualitative
CVP12-4: Providing a safe, reliable and resilient network	Q12-3: Providing a safe, reliable and resilient network	Qualitative
CVP12-5: Innovating to support vulnerable consumers	Q12-4: Innovating to support vulnerable consumers	Qualitative
CVP13-1: Improving how we communicate our performance	Dropped because this could be considered business as usual.	Not applicable
CVP14-1: Reducing bills through efficiency savings	Dropped because efficiency savings are considered under stage 4 of the business plan incentive rather than the CVP	Not applicable
CVP16-1: Improving workforce skill levels	Q16-1: Improving workforce skill levels	Qualitative
CVP16-2: Promoting science, technology, engineering and maths (STEM) subjects and careers	Dropped because of the partial overlap with “CVP8: Supporting local communities”, which covers some STEM education opportunities.	Not applicable
CVP16-3: Providing a flexible delivery model	Dropped because this could be considered business as usual.	Not applicable
New. Not in 1 October draft business plan.	CVP1: Optimisation of harmonic filtering	Monetised CVP
New. Not in 1 October draft business plan.	CVP3: Whole system approach to low-voltage substation re-builds	Monetised CVP

Appendix 3 - Magnitude estimates of consumer value

In this section, we list items that we have been unable to robustly quantify, but for which we are able to provide an order of magnitude estimate of the benefit.

We have not included these magnitude estimate items in the Ofgem snapshot table, which is intended for monetised CVPs.

Magnitude estimate item	Magnitude estimate of benefit to consumers (£m)	Reason for not including in CVP.
ME1 – Adding environmental value to flood protection sites	0.5	There is still some uncertainty around the size and number of sites that will be targeted, and the level of enhancement so we can only provide a rough estimate of the benefits of this action.
ME2 – Carbon emission reductions	0.3	There is some uncertainty over our projected office and substation electricity use, which we need for a robust counterfactual.

Appendix 4 - Qualitative consumer value items

In this section, we list the qualitative consumer value items in our business plan. These provide benefits to consumers, but we are not able to robustly quantify them or provide an estimate of the magnitude of the benefits.

We have not included these qualitative consumer value items in the Ofgem snapshot table, which is intended for monetised CVPs.

Section 6.1 - Qualitative consumer value items in chapter 6: Giving stakeholders and consumers a stronger voice

Q6-1: Further improving our stakeholder and consumer engagement

We are embedding stakeholder and consumer engagement into our business in the T2 period through activities including:

- We will use enhanced engagement to review and update our strategic business priorities on an annual basis to reflect the latest needs of consumers.
- We are committing to changing or stopping our business activities if they are not delivering consumer benefit.
- We will be held to account against stretching targets by an Independent Stakeholder Group, then we will transparently report progress against these on an annual basis through channels which are easily accessible to consumers.

Citizens Advice commented that it was sceptical whether the stakeholder engagement benefits can be monetised. We agree with Citizens Advice and have not put this in our monetised CVP.

Section 6.2 - Qualitative consumer value items in chapter 7: We will enable the ongoing transition to the energy system of the future

Q7-1: Innovation and competition to reduce the cost of the energy transition

In our business plan we are thinking beyond traditional network solutions to minimise cost by:

- Innovating using new technology.
- Innovating by facilitating non-network solutions.
- Facilitating competition in networks where it is in consumers' interest.

Citizens Advice questioned whether our innovation plans are of higher quality or scope than existing ones. We explain in chapter 7 of our business plans how we are proposing new innovations and approaches for the T2 period to reduce the cost of the energy transition. However, we consider it is not possible to robustly quantify the benefits to consumers of our activities.

Q7-2: Anticipatory investment thought leadership

Our business plan includes options that enable the Government’s ambitions to rapidly decarbonise the economy by:

- Delivering the transmission infrastructure required for large-scale offshore wind deployment at a minimum cost.
- Delivering the connections required for the transmission elements of the strategic motorway services solution we have developed with stakeholders.

We are not making any firm commitments in our business plan at this stage but providing consumer value by providing thought leadership in this area, which goes beyond Ofgem’s minimum requirements.

Q7-3: Uncertainty mechanisms

To protect consumers from the uncertainty in the T2 period and to ensure they only pay for the outputs we deliver, we are:

- Proposing new uncertainty mechanisms for boundary capacity, consented projects, reactive compensation, harmonic filtering and protection and control. These adjust our allowances to the outputs we deliver in these areas, removing the risk of consumers paying for outputs it turns out we don’t need to deliver.
- Proposing more sophisticated uncertainty mechanisms for generation and demand volumes. These more accurately adjust our allowances for the outputs we deliver reducing the risk that consumers pay too much for the outputs we deliver.

We consider these proposals on uncertainty mechanisms go beyond Ofgem’s minimum requirements. However, it is hard to robustly quantify their consumer value benefits.

Section 6.3 - Qualitative consumer value items in chapter 8: We will make it easy for you to connect and use our network

Q8-1: Ensuring an effortless end-to-end customer experience

To provide an effortless end-to-end customer experience our business plan includes investments such as:

- Including more parts of the customer connection journey within the CRM system.
- Including areas such as asset protection, the transmission network control centre (TNCC), outages and land management into the CRM system so that we can provide a more complete customer experience.
- Providing a self-service website for connecting customers (customer portal) to improve our customers’ experience by provide customers with a one-stop, timely and continuous access to the information, interactions and knowledge they need.

Our approach will benefit consumers by providing a better experience for our customers than expected in Ofgem’s minimum requirements. This will enable our customers to provide a better service to end-consumers.

Citizens Advice asked whether our suggestions for CVP items for chapter 8 raise our service quality levels and do so at the same or lower cost. We consider our suggestions for chapter 8 do raise service

levels, but we are asking for some funding for them. We also consider it is hard to measure the benefit for end consumers of these activities.

Q8-2: Making connections more quickly in the T2 period

It is a minimum requirement to connect new sources of generation and new demand to our network as soon as possible. In our business plan we are proposing to make these connections more quickly through approaches such as expertly supporting our customers, particularly smaller generators, by providing additional services to help them connect more quickly. These services include:

- creating a pre-application support framework so that we can provide early guidance for potential customers;
- working closely with our customers to identify suitable locations for their projects;
- providing customers with choices and options for the design, timescales and costs of their projects by collaborating with the DNOs; and
- use our expertise and learning from the T1 period to make improvements to the lead time to achieve consent.

Our approach will benefit our customers by providing quicker connections than expected in Ofgem’s minimum requirements. This will enable our customers to provide a better service to end-consumers.

Citizens Advice asked whether our suggestions for CVP items for chapter 8 raise our service quality levels and do so at the same or lower cost. We consider our suggestions for chapter 8 do raise service levels, but we are asking for some funding for them. We also consider it is hard to measure the benefit for end consumers of these activities.

Q8-3: Improving the system access experience

Our draft business plan proposes to improve the system access experience of our customers in the following ways:

- providing greater transparency for our customers about outages;
- minimising the implications that changes to outages have for customers;
- communicating our outages plan and any changes to it in line with our customers’ expectations;
- building a shared view of which works matter most to our customers; and
- coordinating our work more closely with customers to minimise the cost to consumers.

Our approach will help our customers by allowing them to reduce the cost and effect on service of our outages on them beyond what is expected in Ofgem’s minimum requirements. This will enable our customers to provide a better service to end-consumers.

Citizens Advice asked whether our suggestions for CVP items for chapter 8 raise our service quality levels and do so at the same or lower cost. We consider our suggestions for chapter 8 do raise service levels, but we are asking for some funding for them. We also consider it is hard to measure the benefit for end consumers of these activities.

Q8-4: Improving the stability and predictability of our charges

Our draft business plan proposes to improve the stability and predictability of our charges to our customers in the following ways:

- improving the design of the existing uncertainty mechanisms to make them more reflective of our costs;
- improving the design of the existing uncertainty mechanisms to reflect our best forecast of output delivery to reduce volatility;
- being clearer about our charges, any potential changes and the reasons for them, in advance; and
- enabling customers to view the latest information on their charges using the new customer portal.

Our approach will help our customers by providing more stability and predictability in their charges than is expected in Ofgem’s minimum requirements. This will enable our customers to provide a better service to end-consumers.

Citizens Advice asked whether our suggestions for CVP items for chapter 8 raise our service quality levels and do so at the same or lower cost. We consider our suggestions for chapter 8 do raise service levels, but we are asking for some funding for them. We also consider it is hard to measure the benefit for end consumers of these activities.

Section 6.4 - Qualitative consumer value items in [chapter 9: We will provide a safe and reliable network](#)

Note: For reliability there are extensive minimum requirements. Our plan provides huge benefits to consumers in terms of maintaining the reliability of the network, but the CVP only looks at the value above the minimum requirements.

Table 6.5 - Qualitative consumer value items in [chapter 10: We will protect the network from external threats](#)

Note: For protection from external threats there are extensive minimum requirements. Our plan provides huge benefits to consumers by protecting their electricity supply from external threats, but the CVP only looks at the value above the minimum requirements.

Section 6.6 - Qualitative consumer value items in [chapter 11: We will care for the environment and communities](#)

Q11-1: Reducing our carbon emissions

Our draft business plan proposes to reduce our own carbon emissions by more than Ofgem's minimum requirements. We are proposing to:

- Reduce our scope 1 and 2 carbon emissions by 34% (excluding line losses) from a 2018/19 baseline, by the end of the T2 period.
- Reduce our SF₆ leakage by 34% through a targeted asset replacement programme.
- Reduce our carbon emissions from operational transport by 55%.
- Reduce our carbon emissions from business mileage.
- Purchase 100% of our office building's energy from renewable sources and replace other fuel sources with low carbon fuels (this line is part of our monetised CVP: CVP6).
- Implement an energy efficiency programme at our sites.

Q11-2: Encouraging our supply chain to reduce its carbon emissions

Our business plan proposes that 70% of our top 250 suppliers will have carbon reduction targets by the end of the T2 period to help reduce overall carbon emissions.

Q11-3: Providing leadership on sustainability

Our business plan proposes that we will deliver organisational leadership and offer open source data to collaborate and drive environmental progress. For example, we will lead achieving consistent industry approaches to capital carbon and natural capital by 2026. We consider our proposal goes beyond Ofgem's minimum requirements.

Q11-4: Delivering net gain on our construction projects

Our business plan proposes that we will deliver net environmental gain on all our construction projects.

Q11-5: Preserving precious resources

Our business plan proposes we will:

- Recycle 60% of our operational and office waste.
- Reduce our water use by 20%.
- Implement the ISO 20400 sustainable sourcing process.
- Implement circular economy principles across the business.

Q11-6: Promoting supply chain best practice

Our business plan promotes a number of improvements in our supply chain such as:

- Promoting all our UK suppliers, Tier 1 and beyond, paying the real living wage by verifying this in high risk categories.
- Encouraging technical skills development in the supply chain.
- Continuing our activities to implement human rights and supply chain diligence; retaining our top-quartile performance on addressing modern slavery.

Section 6.7 - Qualitative consumer value items in chapter 12: We will be innovative

Q12-1: Further embedding a culture of innovation

Our business proposes that we will further embed a culture of innovation throughout our organisation using approaches such as:

- A Board level commitment to embed innovation into our business as usual culture.
- Using an IDEO cultural survey.
- Adopting National Grid Partners’ ‘centre of excellence’ which establishes a shared understanding of the value innovation can bring and enhances collaboration.
- Being more open and improving collaboration with third parties

Q12-2: Creating a positive social impact

We know that helping society to decarbonise is the biggest contribution to society we can make.

Our business plan proposes that we will use our expertise in this area to engage with and support other industries to decarbonise their processes through approaches such as:

- Delivering our role in the transition to electric vehicles.
- Actively exploring opportunities to support and work with other industries (transport, steel, cement) to identify and implement decarbonisation activities.
- Supporting industry in the development of technology and systems to help them participate in the future energy market.

Q12-3: Providing a safe, reliable and resilient network

Our business plan proposes that we will innovate to improve the safety, reliability and resilience of the network through approaches such as:

- Leading research into new safety technology for the whole energy industry.
- Investigating tools and techniques to allow the digitisation of our activities.
- Investigating risk in real-time to maximise asset performance and value.
- Exploring how artificial intelligence can be applied to our asset, financial and other data sets.

Q12-4: Innovating to support vulnerable consumers

Our business plan proposes that we will innovate to support vulnerable customers through the transition to the energy system of the future. We propose to do this by:

- Engaging further with stakeholders on our role
- Collaborating with parties closer to consumers (suppliers, DNOs, supply chain)
- Exploring our role in this area with stakeholders (leadership or supporting)
- Collaborate with SMEs to develop further understanding in this area of how we can support vulnerable consumers.

Citizens Advice commented that the intent behind this CVP is good, but the outcomes of these activities is as yet uncertain, so will be hard to value. We agree with Citizens Advice and have kept this as a qualitative CVP.

Section 6.9 - Qualitative consumer value items in chapter 16: We are ready and able to deliver**Q16-1: Improving workforce skill levels**

Our business plan proposes to improve workforce skills by actions including:

- Using our Ofsted 'Outstanding' rated Academy to deliver more than 4,000 training days per year.
- Collaborating with other networks and suppliers, through our membership of Energy & Utility Skills (EU Skills) and the associated National Skills Academy for Power (NSAP), to share best practice around training the skills needed in our industry.
- Encouraging all our employees to have an annual development plan with focus on seven key business capabilities that are deemed critical to business performance now and in the future.

Appendix 5 - Ofgem's non-exhaustive list of assessment criteria for the CVP from its 31 October 2019 business plan guidance (see pages 52 and 53)

No.	Ofgem assessment criteria for the CVP
1	Whether the proposal consists of something additional to the minimum requirements.
2	The extent to which the proposal represents additional value to consumers, taking into account the functions typically undertaken by an energy network company as business as usual.
3	The extent to which the proposal includes evidence that shows how it incorporates consumer expectations / priorities and value (which may include willingness to pay).
4	The extent to which the proposal has been reviewed by and received the support of the Ofgem RIIO-2 Challenge Group, companies' CEGs and UGs or, otherwise, the extent to which reasons for the lack of such support are clearly and satisfactorily explained.
5	Whether the proposal includes a monetised consumer benefit and an associated monetisation methodology and the extent to which such a methodology is reasonable.
6	The extent to which the monetised benefits associated with the proposal accrue to current consumers, future consumers and/or consumers in vulnerable situations.
7	Where the proposal relates to a commitment to deliver something within RIIO-2, whether arrangements to address the possibility of non-delivery are set out and the extent to which such arrangements for non-delivery are appropriate and implementable.