

RIO-3 Sector Specific Methodology Consultation

Cadent Response to Ofgem GD Annex

March 2024



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Infrastructure fit for a low-cost transition to net zero

Key Messages:

Our views on the outputs, incentives and uncertainty mechanisms associated with the infrastructure fit for a low-cost transition to net zero outcome are summarised in the table below:

Infrastructure fit for a low-cost transition to net zero	Sector	Retain / Amend	Remove	New mechanism	Cadent view
Environmental Action Plan & Annual Environmental Report	Cross	✓			We support the retention of the EAP & AER; however, they should be amended for RIIO-3. BCF should be incorporated within the EAP and AER. We agree with the proposal to implement a common AER report structure. See our responses to OVQ16-19
Business Carbon Footprint ODI-R	Cross		✓		We support the robust measurement of BCF. This should be a critical part of EAP and be incorporated into the AER.
Net Zero transition coordination ODI-F	GD or Cross			✓	We propose a financial incentive to deliver the behavioural change, leadership and coordination that is needed to enable the energy system transformation. See our response to OVQ21
Shrinkage ODI-R	GD		✓		Incorporate into AER with a common report structure
Shrinkage ODI-F	GD		✓	✓	Remove existing RIIO-GD2 ODI-F. Replace with new UIOLI allowance. Explore how to incentivise pace of transition to observed measurement.
Net Zero re-opener	Cross	✓			We support the retention of the Net Zero re-opener, with a review to ensure it has the necessary flexibility and scope. For simplicity we propose to retain current structures.
Net Zero Pre-construction and Small Projects re-opener	Cross	✓			We support the retention of the NZASP re-opener, with a review to ensure there is no duplication (or gaps) with other mechanisms. We believe that the current scope could cover larger regional planning initiatives.

Infrastructure fit for a low-cost transition to net zero	Sector	Retain / Amend	Remove	New mechanism	Cadent view
Net Zero And Re-opener Development Fund UIOLIA	Cross	✓			We support the retention of the NZARD UIOLIA. We propose to retain the current structure and not to combine it with the NZASP re-opener.
Coordinated Adjustment Mechanism	Cross		✓		We propose to remove the CAM. We propose a financial incentive to deliver the behavioural change, leadership and coordination that is needed to enable the energy system transformation. See our response to OVQ21
UM to support RESP activities	GD			✓	Include in baseline allowances the development and interface work with RESPs supported by Net Zero uncertainty mechanisms to fund asset related work that result from regional plans
Commercial Fleet	GD		✓		Remove PCD and fund in baseline allowances
SGN bespoke Biomethane improved access rollout	GD		✓		<p>No specific comments on these specific bespoke outputs.</p> <p>However, approach for assessing and allowing bespoke PCDs could be improved for RIIO-GD3 to ensure better consistency across networks.</p> <p>Ofgem need to understand if activities put forward are already being delivered within other companies' base plans or in previous periods.</p>
SGN bespoke remote pressure management	GD		✓		
SGN bespoke Gas escape reduction	GD		✓		
SGN bespoke Intermediate pressure reconfigurations	GD		✓		
Cadent bespoke HyNet FEED	GD		✓		Remove, as activity will be completed in RIIO-GD2

GDQ1. What are your views on our proposal to remove the shrinkage ODI-R as a separate output?

We support the removal of the shrinkage ODI-R and for total shrinkage to be reported within the Annual Environmental Report (AER). Stakeholders have challenged that it is difficult to compare performance through the AER in RIIO-GD2. As such, and as discussed in our response to OVQ17, a common report structure should be implemented for the AER to support better comparison between Gas Networks.

The objective for RIIO-GD3 should be for GDNs to move from a modelled estimation of shrinkage to an observed one. As such, careful consideration is needed on what should be reported through the AER. As the timelines for the transition to observed measurement are uncertain, and are likely to vary across GDNs, there is value in the AER providing a consistent view of shrinkage performance. There is value for Ofgem and other stakeholders to have a consistent view between RIIO-GD2 and RIIO-GD3, between business plan forecasts and annual reporting, and across all GDNs regardless of where they are on the journey to observed measurement. As such, we propose that shrinkage reporting in the AER continues to be on a modelled basis using the existing Shrinkage and Leakage model.

This modelled reporting in the AER should then be supplemented by additional observed measurement reporting tied to any financial output delivery incentive or use-it-or-lose-it allowance that is introduced. Whilst this “parallel running” of reporting may add some additional burden for GDNs, it will be required to provide transparency during this transitional period.

Further industry engagement will be required to agree a consistent methodology for developing the AER modelled baseline and for adjusting this baseline during the period based on changes in workload, for example over or under-delivery against the Tier 1 PCD or NARM.

GDQ2. What are your thoughts on the options we have set out for the shrinkage ODI-F and on the design of this incentive?

We support the introduction of a use-it-or-lose-it allowance to enable the transition from modelled estimation of shrinkage to observed measurement during RIIO-GD3. We would also propose that consideration is needed on how the pace of this transition can be incentivised.

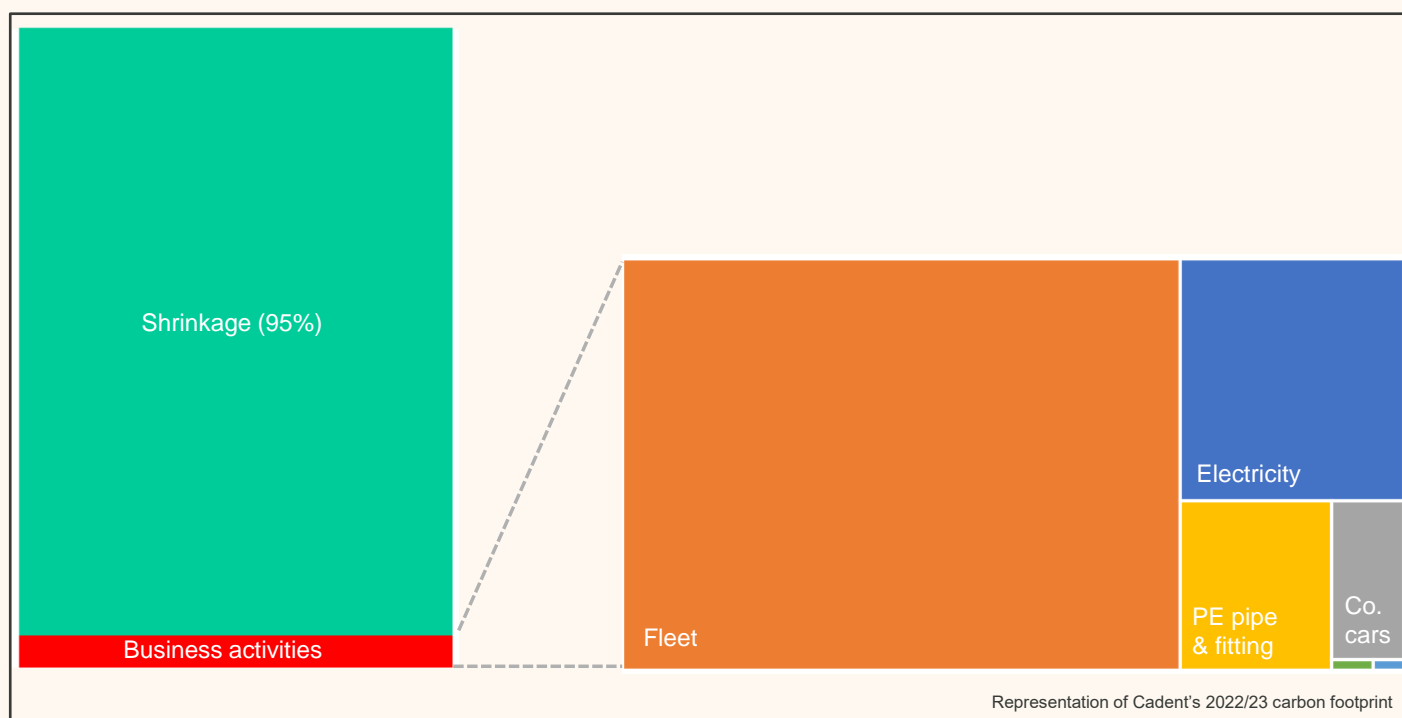


Figure GDQ2.1: Representation of Cadent's 2022/23 Carbon footprint

As shown in figure GDQ2.1 above, there is no greater positive impact that GDNs can have on reducing the climate impact from our operations during RIIO-3 than by tackling leakage from our network.

The shrinkage and leakage model has underpinned the delivery of significant environmental benefits by the GDNs. However, the leakage rates utilised in the model are now over 20 years old, the model does not incorporate all GDN assets, and only supports intervention decisions at a cohort level.

There are now new technologies available that provide the opportunity for more frequent and accurate leak detection and measurement. And the Digital Platform for Leakage Analytics (DPLA), which is being developed through a joint Gas Network SIF project, will be able to leverage the right combination of these new technologies. The DPLA will also be able to process all of this data and enable GDNs to significantly improve the accuracy of reporting and most importantly enable optimised intervention decisions to be made, accelerating leakage reductions efficiently.

As such, the move from modelled to observed leakage reporting must be a priority for RIIO-GD3. Whilst some of the components of the measurement infrastructure can be deployed rapidly a full implementation will likely extend well into RIIO-GD3.

Therefore, we are supportive of Ofgem's proposal to introduce a use-it-or-lose-it allowance, of sufficient scale, to enable this transition during RIIO-GD3. Given the societal value at stake, consideration should be given to how to incentivise the pace of this transition. This societal benefit can also only be delivered if GDNs are able to act upon improved data to optimise their interventions. As such, consideration will be needed on how to ensure the wider RIIO-GD3 framework enables GDNs sufficient flexibility in their asset interventions, for example through the Tier 1 PCD, NARM and through uncertainty mechanisms.

We provide our thoughts on the specific options considered in the SSMC in Table 1 below as well as exploring other potential options.

Options	Our thoughts
Option 1: Retain current ODI-F	<p>The shrinkage ODI-F in its current form is ineffective at driving reductions and should be removed for RIIO-GD3.</p> <p>Effective leakage management requires a holistic approach, considering all possible interventions across all value levers. However, the current incentive isolates just two value levers, both of which are influenced by external factors (including other shrinkage value levers such as mains replacement) and can disincentivise optimal decision making. For example, you could deprioritise mains replacement activity in areas with a high MEG saturation, or you could increase average system pressures (within the deadband) to increase the spread of MEG across the system.</p> <p>As the incentive is currently small, it wouldn't be enough for GDNs to make these bad decisions with the knock-on effects they would have. Instead, RIIO-GD2 is more about avoiding a penalty under the incentive, which doesn't encourage innovation to drive reductions, which needs to be the focus for RIIO-GD3.</p> <p>The current incentive becomes even less valuable the closer GDNs get to completing the iron mains replacement programme. As both gas conditioning and Average System Pressure become less impactful with the replacement of metallic mains with plastic.</p> <p>We agree that the current ODI-F excludes other beneficial activities. For example, as we move from modelled to observed leakage it would miss the value of optimising investment decisions based on improved data.</p> <p>As such, the current ODI-F is not effective and should be removed.</p>

	<p>The key focus for RIIO-GD3 should be moving from modelled estimation of shrinkage/leakage to an observed view and the current ODI-F does not incentivise this so should be removed.</p> <p>By moving to observed we will have far more granular data to inform and optimise our interventions to reduce shrinkage/leakage and these optimal interventions may be disincentivised by the current incentive.</p>
<p>Option 2: Replace ODI-F with UIOLIA</p>	<p>We support the introduction of a use-it-or-lose-it allowance for RIIO-GD3 to replace the existing Shrinkage ODI-F and believe this option to be well aligned to Ofgem's Net Zero duty.</p> <p>The objective for RIIO-GD3 should be transitioning from a modelled estimation of shrinkage to an observed measurement. We see this as a critical area of digitalisation for GDNs during RIIO-GD3. Whilst some elements of the DPLA could be implemented more rapidly, and potentially within base plans, we agree with Ofgem's observations that the timing of the SIF project makes it a challenge to have the outputs from the project fully implemented for the beginning of RIIO-GD3.</p> <p>As such, there is significant merit in, and we would support, Ofgem's proposals to introduce a use-it-or-lose-it allowance to drive this transition to measuring observed shrinkage/leakage.</p> <p>This UIOLI allowance should be of sufficient scale and scope to enable the transition to observed measurement. Our responses to GDQ3 and GDQ4 provide a view on some of the activities and timelines to deliver this transition to observed measurement but we are not yet in a position to provide a well-informed view of costs. However, we would recommend that Ofgem make the decision on the scale of the UIOLI allowance at Draft Determinations rather than as part of SSMD. With the timescales of the DPLA, more clarity on the nature of the investments required will be available in late summer after the SSMD has been published, but in advance of final business plan submission. It is clear that the benefits available support a significant sized UIOLI allowance. In our footprint alone targeting the leakiest assets to reduce emissions by 80% would deliver around £600m of benefits over a five-year period, around £60m of which would be through reduced shrinkage gas commodity costs.</p> <p>We recognise the potential value of including these activities within the scope of the Net Zero and Re-opener Development Fund (NZARD) UIOLI. However, if Ofgem were to proceed with this option, further consideration would be needed on the design of the NZARD to ensure that this can deliver the desired benefits. For example, during RIIO-GD2 the NZARD was limited to projects up to £2m in value. It would be expected that some projects/investment needed to move to observed measurement exceed this level. Whilst the RIIO Net Zero toolkit includes re-opener mechanisms, given the importance of moving at pace to observed leakage we have concerns that needing to submit a re-opener application would create a barrier to the required agility.</p> <p>As such, further consideration is needed on ensuring that funding arrangements are agile and of sufficient scale.</p>
<p>Option 3: Penalty only ODI-F on total shrinkage volumes</p>	<p>Whilst we agree with Ofgem's stated objective of holding GDNs to account for their performance through a penalty only ODI-F, the RIIO-GD3 framework should encourage positive action and innovation to reduce emissions rather than trying to ensure delivery of a minimum level of performance.</p> <p>As such, we do not support the introduction of a penalty only ODI-F.</p> <p>As stated above, we agree with Ofgem's stated objective of holding GDNs to account for their performance in this area and therefore understand their consideration of a penalty only incentive. However, the RIIO price control framework already includes mechanisms to</p>

	<p>ensure either the delivery of key workload, that will deliver baseline reductions, or the return of funding to customers. For example, the Tier 1 PCDs and NARM.</p> <p>If a penalty only ODI-F was to be introduced, it would need to be consistent across the price control. As such, it would need to be based on modelled estimation of shrinkage through the SLM. As the objective for RIIO-GD3 should be moving to observed measurement, and this is how reductions can be accelerated, we see no rationale to incentivise on a modelled basis.</p> <p>If Ofgem were to pursue a penalty only ODI-F based on modelled shrinkage, further industry engagement will be required to agree a consistent methodology for developing the modelled baseline and for adjusting this baseline during the period based on changes in workload, for example over or under-delivery against the Tier 1 PCD or NARM.</p>
Option 4: Option 2 + Option 3	For the same reasons described above next to option 3, we do not support the introduction of a penalty only ODI-F.
Other options	<p>Given the societal value at stake, consideration should be given to how to incentivise the pace of this transition.</p> <p>We will develop and test proposals for incentivisation with our Independent Customer Challenge Group. We would also welcome further engagement with Ofgem, other GDNs and wider stakeholders between SSMD and business plan submission to develop these options into something that could be consulted on as part of Draft Determinations.</p> <p>Three early ideas of options are:</p> <ol style="list-style-type: none"> 1. Allow GDNs five-years after spending the UIOLI allowance in RIIO-GD3 to evidence that the investments made have paid back for customers through commodity reductions and the social cost of carbon (i.e. assess granular decision vs cohort). If the investments do not pay back in that time period, then networks must share the shortfall with customers (a penalty), if the investments pay back ahead of this period, then networks can share the additional benefit with customers (a reward) for the remainder of the time period. This would incentivise GDNs to move at pace and to be able to evidence the value that their use of the improved data has delivered. This would also support the legitimacy of the UIOLI allowance as GDNs would need to demonstrate how they have paid back these investments. This option would need to span into the following price control period (RIIO-GD4). 2. Identify and agree key milestones for the implementation of observed measurement. Provide rewards, based on a percentage of expected benefits, for achieving these milestones with diminishing value the further into the period that they are delivered. For example – delivery in year-one = incentive value x 1, delivery in year-two = incentive value x 0.8 and so on through to delivery in year-five = incentive value x 0.2. 3. Identify and agree an ODI-F mechanism, looking at all of shrinkage, that could be used under an observed measurement approach. Once a GDN has implemented observed measurement the incentive “turns on” for them. This would incentivise pace as GDNs would want to be able to activate this incentive.

Table GDQ2.1: SSMC options with Cadent thoughts

GDQ3. If we provide baseline funding or a UIOLI allowance for shrinkage, can you provide examples of initiatives that could be funded, indicative cost, and why these activities would not go ahead without specific price control funding?

The DPLA SIF project will conclude towards the end of the RIIO-GD2 period and provide a minimum viable product solution for a specific GDN network region(s).

The uncertainties that naturally accompany the roll-out of any new technology make a UIOLI the ideal mechanism, as it would provide the necessary flexibility and agility to ensure that the significant societal benefits it could yield are captured at the earliest opportunity.

The DPLA platform is technology agnostic, which means different localities could use different leakage detection technologies, based on asset types, specific geographical challenges or scalability. Whilst this is a positive inclusion and will drive a competitive technology market, it does make the provision of indicative costs difficult whilst development is ongoing. Enhanced leak detection technologies are becoming more advanced and more easily scalable, so we envisage that for some of the emerging technologies that the unit costs should reduce ahead of RIIO-GD3. Ahead of RIIO-GD3 we will also have a better understanding of the scale (i.e. the volume of equipment) and frequency of use (or measurement activity) of different technologies which will impact the overall cost. As such, we will continue to review technologies and costs as development and roll out of the solution is closer.

Examples of the initiatives that could be funded through a UIOLI allowance include:

- The roll out of the DPLA platform to all GDNs.
- The procurement and operational deployment of leakage detection technologies such as:
 - Vehicle mounted methane detection;
 - Helicopter mounted methane detection;
 - Drone mounted methane detection; and
 - Above Ground Installation methane detection sensors.
- The ongoing costs of maintaining the technologies that have been deployed.
- Making asset interventions based on the improved data, that would not be funded elsewhere within the price control framework, such as:
 - The replacement of venting controllers and positioners at Above Ground Installations to reduce emissions, or to capture vented gases and reinject them into the downstream network;
 - Investment in more efficient preheating equipment, or the adaption of the in-situ equipment, to reduce the requirement for gas usage (for example increasing thermal efficiencies); and
 - Utilisation of flow meters to identify theft locations.

If these activities were not specifically funded through the price control they would not go ahead as there would be no way for a company to recover the costs associated with them.

GDQ4. If the Digital Platform for Leakage Analytics is rolled out to all GDNs in RIIO-GD3, what would be the indicative cost and timescales for this?

We would expect the “full” DPLA project to be completed by February 2026 which would deliver a working DPLA platform for a localised network area. This platform could then plausibly be rolled out within the first year of RIIO-GD3 for all GDNs. However, for each GDN to identify, procure, test and deploy at scale the associated leakage detection technologies that are the right combination for their specific network, to support full deployment of the DPLA, is likely to take longer than this.

As such, we are also working to deliver a hybrid Shrinkage and Leakage Model (SLM), which should be available to roll out by February 2025, to ensure that customer benefits can be delivered ahead of full deployment. The hybrid SLM will feed observed data into the standard SLM to determine leakage rates for similar assets in the network, or potentially across other networks, until they are able to be fully observed. This hybrid SLM could plausibly be in place for all GDNs in time for the beginning of RIIO-GD3.

As the lead partner on the DPLA project, we have a responsibility to support the other GDNs in understanding the milestones associated with the implementation of the full DPLA so that they can identify the timelines for their businesses. The next stage of this engagement is on 14th March, and we are committed to continued working with the other GDNs to ensure they have all of the information they need to support their RIIO-GD3 planning.

With any project of this nature the full costs and technology procurement lead times are subject to refinement, and become more precise, as the project progresses. These will be more fully understood by June 2024 as part of the technology trial work package and short-listing process. **We will aim to have a view of the costs and benefits of roll out for all networks by September 2024 (in time to incorporate into GDN business plans), coinciding with technology trials and phases of the hybrid SLM creation.** However, as mentioned in GDQ3, with the ongoing development of technologies within this rapidly evolving market place, we are unlikely to have a firm view of costs until into the RIIO-GD3 period.

GDQ5. If up to 20% hydrogen is blended into the distribution network, what would be the impact on operational practices and shrinkage?

Operational Practices

The introduction of hydrogen blending into the distribution network would necessitate a thorough review of operational practices, as demonstrated by the ongoing HyDeploy project. This initiative is crucial for assessing the implications on operational procedures, equipment, and assets within the gas distribution system. Given the altered characteristics of the gas mixture, adjustments to existing procedures will be inevitable, thereby prompting changes in operational practices. The specifics of these modifications will be explained in the evidence submission reports of the HyDeploy project.

Shrinkage

Current shrinkage calculations are based on Leakage, Theft of Gas, and Own Use Gas. A review of the three inputs is required to assess the impact to Shrinkage from Hydrogen blending.

- *Leakage*
 - *If we had up to 20% blending, the methane impact would reduce by circa 5% due to the gas properties, this is explained in more detail below. The modelled or observed leakage calculations would need to reflect the blended gas in terms of carbon impacts.*
 - Leakage calculations in the shrinkage models are based on experimental data from 1992 and 2003. A large number of tests have been carried out to ensure a representative data set is created, made up of various pipe materials and sizes. These tests utilised the pressure decay method to capture the current leakage rates and generate leak factors to enable shrinkage calculations to be made. The HyDeploy evidence has shown that the type of leak (i.e. Viscous, Molecular or permeation) has an impact on the change experienced in reference to natural gas. An assessment of the data described from the experimental testing above has shown that the majority of the leakage rate is made up of viscous leak, with the remaining smaller percentage (approximately 0.2%) coming from permeation. Overall, an estimate of 5%* less energy will be lost through shrinkage (based on the leakage input data). The key point to note here is that permeation is a very small percentage of the total impact and therefore there will always be less energy lost.
- *Theft of Gas*

- This will be assumed to be viscous flow and therefore a minimum of 5% less energy will be lost.
- Own use Gas
 - This will be assumed to be viscous flow and therefore a minimum of 5% less energy will be lost.

*Numbers presented above are in reference to Methane and not natural gas. As natural gas varies in quality, this could also vary the 5% described above)

Note, the wider impact will also depend on the cost of Hydrogen.

GDQ6. What are your views on the options we have laid out for the heat policy re-opener, including whether this should be combined with other RIIO-3 net zero mechanisms?

Whether the ability to progress a re-opener is defined in its own Licence Condition or as part of a wider all-encompassing mechanism would not seem to be a material change as long as the scope and flexibility of the re-opener is not limiting. We do think recognition of areas where networks can trigger a re-opener should be continued, but a more flexible approach to timings would be beneficial to all.

Unlike the Net Zero re-openers, the Heat Policy re-opener contained network application windows. Whilst we understand why Ofgem desired a constraint around when a network could submit a re-opener, this is not an efficient way of working. Critical work having to wait for a window inevitably adds delay, there is a need for agility and resourcing on Ofgem's side and the network's side to meet the need, regardless of whether it is planned or not. We would suggest more of a partnership approach is taken to re-opener planning where the networks and Ofgem agree a short/medium term timetable, with regular reviews that high level trigger requirements have been met, and other updates are fed into the plan.

Regarding the inclusion of a re-opener for energy efficiency, whilst we understand the current Government position, it is not unreasonable to anticipate that this may change before the end of RIIO-3. We therefore suggest this trigger area is maintained, and note that with more flexible wording, it can be included as a 'Heat Policy Area', to streamline the drafting.

GDQ7. What are your views on our proposed approach for managing uncertain costs relating to regional energy strategic planning?

Whilst we support the need for UMs to support Regional Energy Strategic Planning (RESP) activities, we think that a differentiation should be made between funding to deliver outputs from the RESP process i.e. building assets, and the process for developing the plans, i.e. we expect some base funding for interfacing with NESO, RESPS and LAEP from RIIO-3. We know there will be a significant requirement to develop detailed regional gas network plans in RIIO-3 whether it is for decommissioning or hydrogen re-purposing or something else. We also know that the expectation and need to support our current non-domestic customers as they plan their own journeys to net zero including switching to new hydrogen infrastructure. Given the high confidence that these activities will be required, then the funding should be within our baseline allowances, rather than through an Uncertainty Mechanism.

We would note here that whilst the design of RESPs may be with shorter term electricity network requirements in mind, the same principles of local actor engagement apply to providing a coherent transition plan for the I&C sector. This will be critical to maintaining and building a thriving zero

emission UK economy, and extensive engagement with regional I&C customers must be the foundation for any new energy infrastructure.

We agree that the existing Net Zero re-opener could be used to account for RESPs recommendations and support the continued use of the Net Zero and Re-opener Development fund in this area.

We would note again, that as we have seen in RIIO-2, re-opener mechanisms can be a slow process, which would hinder the delivery of new strategic investments at pace. Ofgem should work to identify how these processes can be sped up or if alternative approaches are required, such as the ones we have outlined in OVQ4.

GDQ8. What are your views on our proposal to remove the Commercial fleet electric vehicle PCD in RIIO-GD3?

We agree with the removal of the Commercial fleet electric vehicle PCD in RIIO-GD3 on the basis that these costs will be funded via baseline allowances.

However, consideration will be needed in how these allowances are set to ensure that networks that worked hard to deliver these fleet carbon reductions, potentially incurring costs beyond allowances and tackling operational challenges, during RIIO-GD2 are not disadvantaged in the setting of future price controls. This includes giving consideration to the consequential impacts of the use of a greater proportion of electric vehicles on Cadent's operations, relative to other networks who continue to use ICE vehicles. As shown in the charts below (Figure GDQ8.1), we have made great progress in the first two years of RIIO-GD2 in decarbonising our commercial fleet, taking a leading role across the sector.

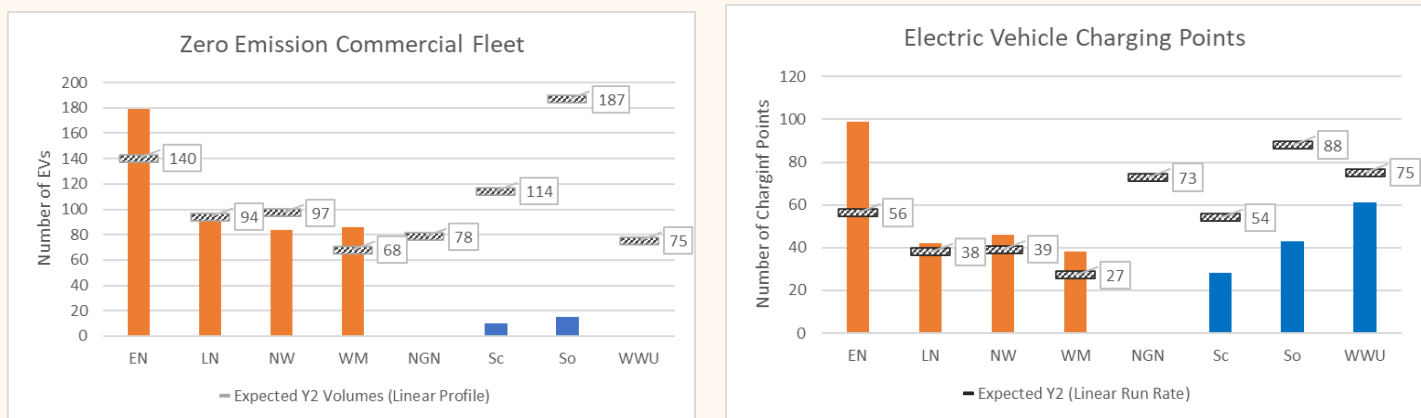


Figure GDQ8.1: Cadent's decarbonisation progress in the first two years of RIIO-GD2

GDQ9. What are your views on our proposal to remove SGN's bespoke Biomethane improved access rollout PCD in RIIO-GD3?

We have no specific comments on the removal of this bespoke output. However, we believe that the approach for assessing and allowing bespoke outputs could be improved for RIIO-GD3 to ensure better consistency across networks. Specifically, when considering bespoke funding we think Ofgem should engage collaboratively with other networks to understand whether outputs put forward will also be delivered by other networks in their plans or have been delivered by others in previous periods. Linked to this (and our response to GDQ55) this is also important as bespoke outputs are separately assessed from comparative regression analysis for cost assessment so should only be removed from Totex where they are truly unique and are or have not been delivered by other networks where costs are left in Totex to be benchmarked.

GDQ10. What are your views on our proposal to remove SGN's bespoke remote pressure management PCD in RIIO-GD3?

Our response to GDQ9 applies to the proposed removal of this bespoke output as well.

GDQ11. What are your views on our proposal to remove SGN's bespoke Gas escape reduction PCD in RIIO-GD3?

Our response to GDQ9 applies to the proposed removal of this bespoke output as well.

GDQ12. What are your views on our proposal to remove SGN's bespoke Intermediate pressure reconfigurations PCD in RIIO-GD3?

Our response to GDQ9 applies to the proposed removal of this bespoke output as well.

GDQ13. What are your views on our proposal to remove Cadent's bespoke HyNet Front End Engineering Design PCD in RIIO-GD3?

We agree that the HyNet FEED PCD condition can be removed for RIIO-GD3 as it will be completed within RIIO-GD2.

The approach taken to fund and monitor this activity in RIIO-GD2 was effective and Ofgem should look to continue this approach for RIIO-GD3 for similar Net Zero activities.

Secure and resilient supplies

Key Messages:

Our views on the outputs, incentives and uncertainty mechanisms associated with the secure and resilient supplies outcome are summarised in the table below:

Secure and resilient supplies	Sector	Retain / Amend	Remove	New mechanism	Cadent view
HSE policy re-opener	GD	✓			We support the retention of the HSE policy re-opener. We propose the use of a broad trigger relating to changes in legislation or HSE policy and/or enforcement approach across all GDNs activities.
Tier 1 Mains decommissioned PCD	GD	✓			The current PCD has worked in RIIO-GD2. However, the cap should be removed for RIIO-GD3. Alternatively, the PCD could be removed and replaced with a volume driver.
Tier 1 Services PCD	GD	✓			The current PCD has worked in RIIO-GD2. However, the cap should be removed for RIIO-GD3. Alternatively, the PCD could be removed and replaced with a volume driver.
Tier 2A mains and services volume driver	GD	✓			We support the retention of the volume driver.
London Medium Pressure PCD	GD	✓			We support the retention of the PCD as the programme of works will continue into RIIO-GD3.
Diversions re-opener	GD	✓			We support the retention of this re-opener as GDNs will continue to face uncertainty in costs relating to diversions.
Emergency response LO	GD	✓			We agree with the continuation and roll over of the current mechanism for emergency response time LO. The target should remain as an annual one.
Tier 1 Stubs re-opener	GD		✓		We agree that this re-opener could be removed for RIIO-GD3 on the basis that these costs are included in GDN base plans and any future changes to HSE requirements are managed through a revised, broader HSE policy UM.

Secure and resilient supplies	Sector	Retain / Amend	Remove	New mechanism	Cadent view
Capital Projects PCD	GD		✓		We agree with the removal of this PCD as the projects in scope will be completed by 31/03/26. There will likely be need for a new Capital Projects PCD for RIIO-GD3.
Gas Holder demolitions PCD	GD				We have no views. We completed this output in RIIO-GD1.
Multiple Occupancy Buildings safety re-opener	GD	✓			Uncertainty remains around potential changes to safety standards regarding MOBs. Either a specific MOBs re-opener should be retained, or this should be incorporated into a broader HSE policy UM.
NGN bespoke job completion lead-time ODI-R	GD				We have no views.
NARM	Cross				There are elements of the RIIO-GD2 NARM framework which need to be finalised to determine if the NARM framework is fit for purpose for RIIO-GD3.
Climate resilience metrics	Cross			✓	We are supportive in principle of the creation of climate resilience metrics.
Resilience metrics	Cross			✓	We are supportive in principle of the creation of a broader resilience metric.
Workforce resilience metrics	Cross			✓	We are supportive in principle of the creation of workforce resilience metrics.
Resilience re-opener	Cross			✓	We support the introduction of a broad resilience re-opener, incorporating all areas of resilience including physical, cyber, climate and workforce.

GDQ14. What are your views on the benefits of Repex that we have identified, how well the Repex programme is currently working, and what evidence we should consider as part of the joint Repex review?

We fully engaged and provided evidence into the iron mains risk reduction programme by DESNZ and Ofgem¹ in the Autumn of 2023 and we support its conclusion that the programme provides value for money.

¹ [RIIO-3 Sector Specific Methodology Consultation – GD Annex \(ofgem.gov.uk\)](#) - Section 3.10, and [Delivering a better energy retail market - GOV.UK \(www.gov.uk\)](#)

The benefits of the programme comprise:

- Safety improvement, new PE mains have a much-reduced leakage frequency compared with the legacy iron mains that they replace and reduces the risk these mains will leak or fracture creating gas in building and potential ignitions. Hence the programme results in fewer deaths and injuries and damage to property.
- Environmental benefit, methane is a significantly more potent greenhouse gas than carbon dioxide and hence the programme delivers massive environmental benefits of lower leakage and lower emissions.
- Operating cost benefit, the lost gas has to be replaced, and gas leaks must be attended and repaired, reducing leakage saves operating cost.

A recent report by Baringa, which we provided into the DESNZ/HSE/Ofgem review, explored the scale of these benefits, and compared them with the costs of doing replacement work. The report shows that the replacement of the Tier 1 iron mains population is cost beneficial for customers under any credible scenario of future gas network operation.

We are currently on track with the Iron Mains Risk Reduction Program in RIIO-2 and confident in delivering the required output during the period. The programme is delivering its goals of fewer incidents lower emissions and fewer escapes to repair. It should be noted that whilst the volume of iron mains is declining because of the programme the remaining pipes continue to age and deteriorate and therefore serious incidents are still occurring which can endanger life and property. A DNV recent GDN wide report that we provided into the review, looked at legacy iron pipe failure statistics to examine deterioration trends. The report shows that for the work that is being carried out to replace mains the trend in escapes, emissions and so incidents would be materially adverse and hence the programme continues to have significant safety risk benefits.

From the analysis work we completed; it is our belief that the next stages of the review of the programme should look at the benefit that could be obtained from extending it to cover steel pipes. Steel pipes cause few incidents however they have higher greenhouse gas emissions than comparable size iron pipes because they have a higher number of smaller volume leaks and there has been no significant historic replacement resulting in these assets remaining in relatively poor condition. We believe that new technology, specifically Advanced Leakage Detection, could usefully be applied to help identify those steel pipes that have the worst leakage performance, and which would give significant customer benefit were a targeted replacement programme undertaken.

We also believe that there is a small minority of larger diameter (that is larger than 17") iron mains that are not currently being replaced but which are cost beneficial to replace because of the risk that they pose, or because their operating costs due to their poor leakage performance means that they should be replaced. Asset Health will be the predominate driver for replacement, however further analysis has shown that by targeting these specific larger diameter assets we can maximise carbon abatement.

We will continue to work with the HSE and DESNZ, bringing forwards detailed proposals to continue with the existing programme and to extend it to target the leakiest steel and highest risk large diameter iron mains within our RIIO-3 Business Plan.

GDQ15. Do you consider there to be alternative approaches that could deliver mandatory Repex at least cost to the consumer whilst maintaining the legislative safety standards?

We support the initial conclusions of the HSE, DESNZ and Ofgem review which determined that the Tier 1 iron mains programme should continue in its current form, and that further work should be done to assess how work should be prioritised on Tier 2 and 3 iron mains and steel assets which have been the subject of recent incidents highlighting the risks presented by these pipes in the absence of appropriate intervention. In addition to the safety benefits, the HSE, DESNZ and Ofgem review highlighted that the iron mains replacement programme has a significant impact in reducing methane leakage.

In addition, the current Iron Mains Risk Reduction program is a well-established safety programme that deals with iron mains that are not fit for the purpose of transporting gas. We have driven significant cost efficiencies in the delivery of the programme over its course and particularly over RIIO-1 and RIIO-2. These design, supply chain and productivity efficiencies have been embedded into the organisation and into the cost benchmarks that have underpinned the RIIO controls. We will continue to seek ways to deliver the programme in the most efficient way alongside addressing the safety and environmental priorities of the programme and we will bring our proposals forward within our business plan. As indicated in our response to GDQ51, we face a number of headwinds in terms of the costs of the programme. In summary these are commercial cost pressures from inflation and competition for resources, the increasing complexity of work and greater streetworks related costs. Our plans will be focused on optimising our work and approach to try and mitigate and manage these pressures in the best way.

GDQ16. What are your views on our proposal to keep the HSE policy re-opener, but to reduce its use to a single trigger?

We agree with the proposal to keep the HSE policy re-opener for RIIO-GD3. Whilst we do not necessarily anticipate further changes to HSE policy relating to excessive hours and workers fatigue, there could be new areas where the HSE changes policy and/or enforcement approach which GDNs will need to respond to in RIIO-GD3. For example, and as discussed in our response to GDQ26, there are ongoing industry discussions with the HSE around whether the safety arrangements currently in place for the highest of high-rise buildings should be extended to all high-rise buildings.

Where there are changes to safety legislation, or changes to regulatory interpretation or enforcement approach from the safety regulator, GDNs must respond and this can result in material additional costs, unforeseen or unforecastable at the time of setting the price control, being incurred. These costs are outside of our control and necessary to ensure legal compliance. Therefore, we would propose the use of a broad trigger relating to responding to changes in legislation or HSE policy and/or enforcement approach across all GDNs activities.

GDQ17. What are your views on the design of the Tier 1 mains decommissioned PCD?

The current Tier 1 mains decommissioned PCD has worked well so far in RIIO-GD2. Looking at RIIO-GD3, we consider the context provides opportunities for simplifying the PCD. As we approach the completion of the iron mains replacement programme, there is less of a risk of significant over delivery (increase in allowances) which was a concern at RIIO-GD2. In addition, the revised carbon values provided by Government confirm that the programme delivers value for customers. We therefore consider the cap is unnecessary and should be removed.

Furthermore, it would be worth considering replacing this PCD with a volume driver. The volume driver would set unit costs by diameter band, similar to the PCD and would fund GDNs only for the work they

actually deliver. There would also be a “natural cap” to the volumes of work that could be funded which would be determined by the amount of work required to complete the iron mains replacement programme.

Removing the PCD cap or utilising a volume driver would also provide further flexibility to GDNs to enable them to act on the improved data and analytics relating to leakage that will become available in the run up to and during RIIO-GD3. Please see our responses to GDQ1-4 for further information.

GDQ18. What are your views on the proposed design of the Tier 1 services PCD?

In principle, we agree with the proposal to maintain the Tier 1 services PCD.

However, by nature, PCDs involve a meaningful regulatory burden for both companies and Ofgem. We think the creation of a volume driver should be explored. As noted by Ofgem, replacing non-PE pipes when we encounter them is a requirement of the HSE. Companies need to be funded for this activity and Ofgem and customers should have visibility over the work delivered and the efficiency of the costs incurred. In this context, we do not think the additional administration required for PCDs adds value and that a volume driver could achieve Ofgem’s objective while reducing the burden.

GDQ19. What are your views on the design of the Tier 2A mains and services replacement volume driver?

Tier 2A Mains workload can be difficult to predict, as such the Tier 2A mains and services replacement volume driver should be maintained as is for RIIO-GD3.

GDQ20. What are your views on the design of the London medium pressure PCD (Cadent North London only)?

As set out in our RIIO-GD2 plan the London Medium Pressure programme of works will continue into RIIO-GD3. Therefore, the London medium pressure PCD should be retained for RIIO-GD3 and updated with the activities that will be completed in that period.

Our RIIO-GD2 plan set out that during this control period we will focus on pipes above safety threshold (PAST) work and in the RIIO-GD3 period we would look to join up the “spine” of this network.

In reviewing network resilience, we have also identified additional work that will need to be included within the scope of the London Medium Pressure programme and our RIIO-GD3 business plan.

GDQ21. What are your views on our proposal to retain the diversions and loss of development claims re-opener in RIIO-GD3, and whether all the cost areas are still uncertain in RIIO-GD3?

We agree that the diversions and loss of development claims re-opener should be retained in RIIO-GD3. GDNs will continue to face uncertainty in costs relating to diversions or avoiding the need for a diversion.

We note that there is a RIIO-GD2 licence modification currently being processed by Ofgem which recognises that:

- Undertaking a diversion may not always be the most efficient solution and funding should also be allowed for alternative solutions that avoid the need for a diversion. This could include taking legal action or paying for the removal of buildings or structures;

- There are a greater number of environmental factors than just soil erosion that threaten network resilience and that GDNs should be funded to respond to; and
- Where companies are aware of environmental factors that are threatening the resilience of the network, they should not wait until the damage has occurred. Instead, they should take proactive action to avoid damage, safety risks and loss of supply.

This revised scope for the diversions re-opener should be retained for RIIO-GD3, unless the trigger relating to environmental factors is included within the proposed broad resilience re-opener.

There will continue to be scenarios where non-rechargeable diversions or alternative action involving material costs to avoid a non-rechargeable diversion will be required, for example:

- Cases of encroachment where we have no legal right to pursue the current owner / occupant so we either need to undertake a diversion or pay for a building / structure to be removed to resolve the encroachment.
- Cases of encroachment where we have a legal right to pursue the current owner / occupant and incur significant legal costs or undertake the diversion as the legal costs would be greater than that cost.
- Cases of settling claims brought by landowners whose ability to develop their property is curtailed by the presence of gas pipelines.
- Cases of environmental factors threatening the resilience of our network and security of supply.

GDQ22. What are your thoughts on our proposal to continue the emergency response time LO and whether the target should be set monthly, quarterly or annually?

We agree with the continuation and roll over of the current mechanism for emergency response time LO.

The target should remain as an annual one. The target represents a minimum standard which has been in place, and worked well, for over 30 years.

The circumstances for impacts on the service last year were caused by external impacts from the wider retail industry and difficulties customers faced in contacting other service providers such as suppliers and in home appliance engineers. The impact on the service was unforecastable and the form of the service standards would have made no difference to the outcome. We have engaged extensively with the HSE, as well as Ofgem, on the causes and impacts of these events.

Throughout this challenging period, we saw continued strong customer satisfaction across our networks. Our Customer Satisfaction scores are consistently high across all of the year in all of our networks, with there being cases of greater satisfaction in busier winter months than quieter summer ones.

Moving forward to provide a view on service throughout the year, in the annual cost and volume RRP GDNs could report the monthly breakdown against the annual emergency response time LO and the annual customer satisfaction measures.

Network	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	22/23
EN	9.53	9.48	9.60	9.61	9.58	9.63	9.64	9.56	9.49	9.41	9.54	9.56	9.57
LN	9.45	9.37	9.35	9.39	9.42	9.33	9.40	9.40	9.41	9.38	9.41	9.36	9.39
NW	9.59	9.62	9.62	9.51	9.61	9.51	9.63	9.57	9.56	9.65	9.60	9.50	9.58
WM	9.54	9.54	9.55	9.56	9.65	9.53	9.73	9.62	9.52	9.50	9.46	9.43	9.56

Table GDQ22.1 Cadent ERR Customer Satisfaction scores 2022/23

GDQ23. What are your views on our proposal to remove the Tier 1 iron stubs re-opener in RIIO-GD3 and our approach for the costs to be included in the baseline allowances?

We agree that the Tier 1 iron stubs re-opener could be removed for RIIO-GD3 on the basis that these costs can be included in GDN base plans and any future changes to HSE requirements could be managed through a revised, broader HSE policy re-opener.

We agree that, following GDN activities during RIIO-GD2, there is more certainty on these costs and that appropriate baseline allowances can be calculated for RIIO-GD3. However, as they will be new costs introduced into the baseline and to be funded ex-ante, due consideration is needed by Ofgem on the most appropriate approach to take to assess costs in a robust way. This could include modelling these costs as part of the comparative regression-based benchmarking undertaken (with appropriate adjustments made to cost drivers to ensure robust modelling) should they not meet any of Ofgem's cost exclusion criteria (see our response to GDQ55 for further details). If exclusion criteria are met, these costs should be separately assessed via technical or non-regression approaches. We are keen to engage with Ofgem on the appropriate methods to assess these costs via the RIIO-GD3 Cost Assessment Working Groups.

During RIIO-GD2, on agreement with the HSE, we have introduced a robust assessment process to target our approach to risk management and intervention on Tier 1 Stubs. This process firstly involves a desktop assessment. If the stub fails this desktop assessment then an onsite assessment is undertaken. If it fails both the desktop and onsite assessments then the stub is removed. As the process has matured, we have seen a rise in the number of stubs passing the assessment process. On average 80% of our stub population passes the assessment process and is therefore able to safely be left in situ. Those stubs left in situ then adopt the risk score of the parent main they are attached to and will be decommissioned in line with the mains replacement programme and when the parent main is to be replaced.

This assessment process ensures that we manage the risk associated with Tier 1 Stubs effectively, whilst optimising efficiency in delivering decommissioning work. This will be the basis of our RIIO-GD3 base plan.

GDQ24. What are your views on our proposal to remove the Capital projects PCD in RIIO-GD3?

We agree with the removal of the RIIO-GD2 Capital Projects PCD on the basis that the projects in scope of will be completed by 31 March 2026.

There will likely be need for a new Capital Projects PCD for RIIO-GD3, should large and atypical projects be separately assessed as part of the cost assessment process and they meet the scope for inclusion as PCDs in RIIO-GD3. In line with our response to GDQ55, we believe this could also include projects which relate not solely to capex. This builds on principles used at RIIO-GD2 whereby Cadent had Repex projects included in the Capital projects PCD.

GDQ25. What are your views on our proposal to remove the Gas holder demolitions PCD in RIIO-GD3?

No views. Cadent completed this output in RIIO-GD1 and other remaining GDNs have signalled completion in RIIO-GD2.

GDQ26. What are your views on our proposal to remove the Multiple Occupancy Buildings safety re-opener in RIIO-GD3?

Uncertainty remains around potential changes to safety standards regarding Multiple Occupancy Buildings (including Multiple Occupancy Commercial Buildings, formerly known as Complex Distribution Systems). As such, either a specific Multiple Occupancy Buildings safety re-opener, or a broader HSE policy re-opener, will be required in RIIO-GD3 to ensure that GDNs can respond to any changes. For example, there are ongoing industry discussions with the HSE around whether the safety arrangements currently in place for the highest of high-rise buildings should be extended to all high-rise buildings.

GDQ27. What are your views on our proposal to remove NGN's bespoke job completion lead-time including re-instatement ODI-R in RIIO-GD3?

We have no views on this proposal.

High quality of service from regulated firms

Key Messages:

Our views on the outputs, incentives and uncertainty mechanisms associated with the high quality of service from regulated firms outcome are summarised in the table below:

High quality of service	Sector	Retain / Amend	Remove	New mechanism	Cadent view
Vulnerability minimum standards LO	GD	✓			We support Ofgem's proposal to retain the RIIO-GD2 vulnerability minimum standards.
Vulnerability and Carbon Monoxide Allowance UIOLI	GD	✓			We strongly support the retention of the VCMA. The VCMA funding level should be set at £62m (18/19 prices) for Cadent, with 25% allocated to collaborative projects.
Fuel Poor Network Extension Scheme	GD		✓		We support the removal of the FPNES, based on the reduction in demand for the scheme. The scale and scope of the VCMA should enable GDNs to continue to support those living in fuel poverty.
Consumer vulnerability ODI-R	GD		✓		We support the removal of this ODI-R. We provide regular reporting on a number of metrics (including these) in our annual sustainability reporting process, on our website and in our annual report.
Personalised welfare PCD	GD		✓		We agree with the removal of this PCD. We support Ofgem's preferred option to fund this as a specific project under the VCMA. The funding allocated in RIIO-GD2 should be added to the VCMA for RIIO-GD3
Customer Satisfaction ODI-F	GD	✓			The C-Sat ODI-F should be retained for RIIO-GD3, with a value of $\pm 0.5\%$ base revenue, but some changes are required to ensure that GDNs are incentivised to deliver even better performance for their customers. See our response to GDQ35
Complaints ODI-F	GD	✓			We support the retention of the current complaints ODI-F. No amendments are required to the structure of the incentive.

High quality of service	Sector	Retain / Amend	Remove	New mechanism	Cadent view
Guaranteed Standards	GD	✓			We support the continuation of GSOPs. A full review should be undertaken during RIIO-GD3. The overall SSpc D10 overall standards (OSOS) relating to connections should be removed for RIIO-3 given the removal of the DLCA and falling volumes.
Unplanned Interruptions	GD	✓			We support the retention of this ODI-F. No changes are required for Cadent; the RIIO-GD2 metrics and standards can be rolled over to RIIO-GD3.
Collaborative Streetworks ODI-F	GD	✓			This ODI-F should be retained for RIIO-GD3 and expanded to all GDNs.
Specified Streetworks re-opener	GD	✓			The specified streetworks costs re-opener is still needed in RIIO-GD3 and should be retained with a review of the scope.
Domestic Connections volume driver	GD		✓		Given the proposed removal of the DLCA, we agree that the domestic connections volume driver can be removed.
Smart metering rollout re-opener	GD		✓		We agree with the removal of the smart metering rollout costs re-opener. As the rollout is less than 60% complete, the cost of interventions will need to remain in GDN base plans for RIIO-GD3.
High Rise Building plans ODI-R	GD		✓		We agree with the removal of this ODI-R. Costs associated with teams to manage the stakeholder relationships associated with providing good service for MOB customers will remain for RIIO-GD3 in our base plan.

GDQ28. What are your views on our proposed position on the role of GDNs in relation to vulnerability, and how can they support a just transition to net zero?

GDNs are largely unique amongst organisations in that they typically engage with more end customers in their own environment (usually their home) than possibly any other organisation. Their employees and contractors see 'life as it happens', whilst not selling any products and services. We believe that this combination of factors means that there are no organisations better placed to support customers living in vulnerable situations across a number of key areas.

At Cadent, we believe that we have a duty to maximise on these two factors to ensure that we can provide the most tailored and beneficial support to customers living in vulnerable situations. We therefore train all of our front-line staff on an annual basis on how to identify different types of vulnerability, empowering them to act. We also recognise that the number of households in vulnerable situations and the levels of complexity surrounding this continues to increase, which is why we supplement the regulatory funding (Vulnerability and Carbon Monoxide Allowance (VCMA)) with

around £5m per year from the Cadent Foundation which is a charity funded directly by our shareholders rather than consumers (at a scale not matched in the sector).

Given this unique and hugely important role that GDNs such as Cadent play in society, we fully support Ofgem's proposal in relation to vulnerability and how GDNs can support a just transition to net zero. We note that Ofgem have listened to the views of GDNs, expert stakeholders working in the vulnerability space and gas consumers and have acted on their feedback. For example, when considering the role that GDNs now play 'beyond the meter' in providing engineering and financial support to customers temporarily off gas and the transition of funding from the Fuel Poor Network Extension Scheme (FPNES) into the VCMA, enabling GDNs to much more in support of customers in vulnerable situations.

During RIIO-2 the number of customers living in fuel poverty has risen by over 50% as the cost of essential goods and services, including energy have risen significantly. At the same time, we know through our own research that the level of trust on many other organisations, especially energy suppliers and local and national Government has reduced considerably. As such, the role for GDNs through the period has shifted, with a greater emphasis being placed on supporting those in fuel poverty, and very importantly, creating a trusted environment in which community members can express their challenges and seek support. Our Centres for Warmth (c.200 as of January 2024) are just one of the ways Cadent have risen to this need, and Ofgem's flexibility in setting the parameters in which GDNs (and others) can utilise regulatory funding to best serve their customers' needs has been incredibly important. This level of forward thinking and willingness to adapt to changes brought on by external factors is an essential principle that must continue into RIIO-3. This is especially important as we seek to respond to, yet unknown, challenges that may come from the energy transition process, people continue to live for longer and / or as the challenges associated with the cost of living continue.

GDQ29. What are your views on our proposal for GDNs to develop individual and joint-GDN vulnerability strategies?

We agree with this proposal. As noted, each GDN has its own vulnerability strategy, and we work closely together to maintain a clear and strategic overview of how collaborated VCMA funding is utilised. Cadent support the continuation of this and recognise the importance of maintaining both strategies.

For example, through the extensive customer and stakeholder engagement work completed by Cadent, we have evolved the role of the Cadent Foundation, something unique to Cadent and funded not by consumers but by our shareholders, but also something entirely interrelated into Cadent's customer vulnerability strategy. In developing our strategy, we need to consider how we utilise both the Foundation's funding and regulatory funding available to drive the greatest levels of customer support and impact.

Cadent's customer vulnerability strategy is based on an ambition that all customers are safe, comfortable and independent in their homes, no matter their personal circumstances. This means focussing on four key areas:

- PSR awareness and accessibility
- Carbon Monoxide safety
- Fuel poverty and affordability
- Services beyond the meter

This approach recognises the importance of forensically understanding people's needs, ensuring our services are available and understood by all, keeping people safe and, importantly keeping them on gas – be that through financial support or engineering solutions.

GDQ30. Do you agree with our proposal to retain the RIIO-GD2 vulnerability minimum standards is sufficient to ensure customers in vulnerable situations are protected and treated fairly?

We support Ofgem's proposal to retain the RIIO-GD2 vulnerability minimum standards. However, we note that all GDNs, especially Cadent see these very much as a minimum standard only and provide service levels that significantly outperform them.

Some of the GDNs, including Cadent, seek external assurance from various standards, such as the British Standards Institutes BSI18477 standard, which involves a comprehensive, week-long external audit to assess how accessible and well managed process are deployed across an organisation, with a clear focus on supporting customers in vulnerable situations. Whilst we do not necessarily recommend that the attainment of such a standard should be mandated, the ongoing commitment by many companies to seek the standard demonstrates that they are keen to operate well beyond a minimum standard.

GDQ31. What are your views on our proposal to retain the use of the VCMA UIOLI allowance, on the alternative option to incentivise vulnerability through an ODI-F, and on which activities to support vulnerability could be funded through baseline allowances?

The VCMA has proven to be a huge success in RIIO-GD2 to date. This has been demonstrated through the annual reports published by GDNs individually and collaboratively and the significant successes shared at the annual showcase events. The flexibility provided within the methodology has enabled GDNs to respond to the changing external environment, especially as the cost of living has increased much higher than could reasonable have been expected.

Whilst other mechanisms operate successfully in other industries, the role played by a GDN is truly unique. As explained in our response to GDQ28, GDNs engage more widely with customers (especially in their own homes) than almost any other organisation, and they do so without trying to sell any product or service. Couple this with expert training for front line employees (which Cadent provides) and this creates the ideal model to identify and respond to specific vulnerability needs. Therefore, the VCMA methodology, providing funding for GDNs to utilise on a range of projects to support the customers they encounter is the ideal approach.

The VCMA ensures that reward (albeit reputational) is based on measurable and reportable customer outcomes, not actions or outputs, which, whilst very useful in many areas, do not always demonstrate the best results for customers. In the first two years of RIIO-GD2, Cadent alone have reached over 5 million customers through the delivery of over 130 individual projects, creating a social return on investment of over £19 for every £1 spent and saved customers living in fuel poverty over £300m. We have demonstrated real thought leadership (that would not have been encouraged or even possible under the ODI-F approach) in creating Centres for Warmth (which have ensured over £300m has gone back to customers in fuel poverty), the energy ecosystem (which is joining up funding and ideas across multiple industries to make every pound go even further) and our array of services beyond the meter (which is mitigating the greatest risk our customers find themselves in – a cold home).

When considering the types of services that the VCMA should be used for, versus those that should be funded base allowances, we already fund vulnerability training, service signposting and many other, more basic vulnerability support programmes through the base allowance. We see these as business-as-usual services and not acceptable for funding by the VCMA, which we agree should be used to fund services that go further, including new and innovative approaches to supporting even

more customers living in vulnerable situations. In order to facilitate this, the VCMA guidelines could be amended to list these such 'standard' services as out of scope for future projects – Cadent would support such an approach.

GDQ32. At what level should VCMA funding be set to ensure its effectiveness and sustainability, and what percentage should be ringfenced for collaborative projects?

We support the continuation of 25% of funding to be allocated to collaborative projects. This ensures a high level of best practice sharing, but allows individual networks to be innovative, fleet of foot and collectively explore different ideas, which ultimately become collaborate projects.

However, we do not agree that the funding should be set at the equivalent (taking into account inflation) level as the start of the RIIO-2 regulatory framework. This is for several reasons:

1. Cadent has delivered more than £19 in social return benefit for every £1 spent. Typically, the third sector sets a stretch target of £4 benefit for £1 spend. As described above, this is partly because of the unique role that GDNs play in society – see response to question 28 above.
2. We regularly undertake robust customer research projects and the support GDNs provide to customers living in vulnerable situations is consistently seen as their number one priority and most confirming that they would be happy to spend a greater proportion of their bill to enable Cadent to do more in this space. Likewise, the feedback provided by the 100s of stakeholders attending annual showcase events, demonstrates the support for GDNs going further.
3. We have established a significant legacy through existing VCMA projects, especially our Centres for Warmth. Whilst we recognise Ofgem's intention to provide GDNs with a reasonable notice period to enable a controlled phased slowdown of initiatives) to mitigate the stranding risk, the reality is that this is not always possible or indeed, feasible. For example, with the extension of the funding in the latter years, this means that there are actually more projects planned and operational in the last year of RIIO-GD2 than any other year. Also, the removal of initiatives such as Centres for Warmth would mean up to 200 job losses and the need to find alternative routes for many key services that local communities and even local NHS trusts have come to rely on.
4. Personalised Welfare – as explained in our response to Question 48, whilst there is merit in rolling the existing Personalised Welfare output (unique to Cadent) into the VCMA mechanism, by doing so, it effectively reduces the overall funding available to customers in vulnerable situations. In RIIO-GD2 Cadent received £12.7m to deliver a range of personalised welfare, in addition to the VCMA. In order to ensure that we don't end up delivering less in RIIO-GD3, if the provision of personalised welfare is to be included as part of the VCMA, the overall VCMA fund needs to be increased to account for this.
5. As detailed in our response to Q42, whilst we support the removal of the Fuel Poor Network Extension Scheme (FPNES), we believe that the VCMA funding should be increased beyond Ofgem's proposed level, noting that without the FPNES there is a need for GDNs to go further, through other initiatives that directly support customers living in fuel poverty. Our experience of RIIO-GD2 suggests that a minimum of £2m per year is required to continue to support customers to a similar level as GDNs are doing today.
6. In February we held a detailed discussion with our Customer Challenge Group, who support our proposal to seek additional funding through the VCMA than Ofgem are currently proposing.

For these reasons, we recommend that the VCMA funding is increased beyond Ofgem's current proposal to directly fund an allowance for personalised welfare (£12.7m). Additionally, given the incredible reach and embeddedness of many of the Cadent projects, especially Centres for Warmth, we recommend an additional £10m, which will fund just over half of the Centres for an additional year.

At the start of RIIO-GD2, Cadent's VCMA was £29.7m. Therefore, we propose the allowance for RIIO-GD3 to be £29.7m + £12.7m (personalised welfare) + £10m (centres for warmth) +£10m (fuel poverty) = £62.4 (in 18/19 prices). Whilst this is a significant reduction in overall vulnerability funding (because of the removal of the FPNES), by merging funds into a single regulatory mechanism, the increased flexibility will ensure that the available funds are maximised to deliver the greatest possible customer outcomes.

However, as has been discussed in several of the working groups, it may be possible that, instead of adding some of all of this additional funding to the VCMA, it could be added into the base cost allowance. Whilst we believe that the VCMA is the most appropriate route (as we can then see all vulnerability related spend in one place and measure the associated benefits more clearly), we would also support this alternative approach, as it will still enable us to deliver the outstanding level of service to the vast numbers of customers in vulnerable situations across our networks.

That said, as any costs added into the baseline would be new, due consideration is needed by Ofgem on the most appropriate approach to take to assess costs in a robust way. This could include modelling these costs as part of the comparative regression-based benchmarking undertaken (with appropriate adjustments made to cost drivers to ensure robust modelling) should they not meet any of Ofgem's cost exclusion criteria (see our response to GDQ55 for further details). If exclusion criteria are met, these costs should be separately assessed via technical or non-regression approaches. Based on the levels of spend made in RIIO-GD2 we expect costs across our networks are likely to be disproportionate to others and will not be reflective of cost drivers in Ofgem's model so we believe they may warrant separate assessment. We are keen to engage with Ofgem on the appropriate methods to assess these costs via RIIO-GD3 Cost Assessment Working Groups.

GDQ33. How should VCMA funding be allocated to ensure maximum impact for consumers in vulnerable situations?

The nature of customer vulnerability is such that it is incredibly difficult to determine how to allocate funding. Every area of the UK has its own unique challenges; some areas are relatively wealthy, but with pockets of severe deprivation, whereas others are relatively less well off, but with less severe deprivation. Both of these scenarios present their own issues and neither one is necessarily any easier than the other.

These regional complexities exist in many ways and with the comprehensive data analytics we have available to us in Cadent, we can map any number of scenarios into a Google Maps system and see hotspots of vulnerability shift depending on the variables we exploit.

Whilst 17 of the most deprived 20 regions of the UK sit in Cadent networks, which would suggest that a larger than 50% allocation of the VCMA is proportioned to Cadent, the reality is that other challenges exist elsewhere and we believe that the only fair and appropriate mechanism, however imperfect, is to continue to allocate funding based on the number of meter points.

GDQ34. How can learnings from VCMA projects better inform the GDNs' organisational approaches to consumer vulnerability?

It is essential that GDNs seek input and expertise from multiple sources in order to prioritise and deliver projects in the most effective manner, to ensure maximum customer benefits are achieved.

Cadent work with over 40 strategic partners, mainly charities, but also the likes of Citizens Advice, National Energy Action and delivery partners such as National Health Trusts and Fire and Rescue services.

For each project we fund, we complete a Project Eligibility Assessment (PEA), which we later publish on the Cadent website. Part of the PEA requires the capture of customer and stakeholder evidence to support the project and we include the output of our ongoing engagement with our strategic partners, plus our continual customer research and insights programme. At the end of each project, we complete a thorough lessons learnt process, again involving third parties.

We also have our own Customer Challenge Group to ensure an outside-in approach is considered and we capture all of this in our annual showcase report to provide transparency and confidence.

The existing VCMA mechanisms encourage this high level of engagement with third parties, and we do not believe that a more formal approach is required. Indeed, by stipulating which third parties should be involved or in what capacity is likely to limit the exchange of good practice and possibly create a level of bias in a few key areas. Therefore, we propose that Ofgem continue to mandate the clear capture of customer and stakeholder input into projects funded by the VCMA, but not which stakeholders or how this is done. It should be incumbent on the companies themselves to demonstrate a high-quality approach is being taken, or risk the funding not being provided by Ofgem if it is not demonstrated (as is the case today).

GDQ35. What are your views on the options we've set out to incentivise customer satisfaction during RIIO-GD2?

We agree that the customer satisfaction incentive has driven significant improvements in performance across RIIO-GD1 and RIIO-GD2 and should remain for RIIO-GD3. However, to ensure that GDNs are incentivised to deliver even better performance for their customers, some changes will be required for RIIO-GD3.

We explore these changes later in our response, but they consider the relative importance of the three current customer journeys that are measured, noting the reduced volumes in connections and potential increased volumes in planned work, not least as the network evolves to prepare for any decarbonised future.

We've also explored how we might measure satisfaction levels for other customer journeys and / or customer groups currently not surveyed. Lastly, we've proposed how Ofgem might drive yet another step change in customer performance scores by evolving the current questionnaires to focus on "worst served customers".

The incentive design should continue to be made up of common static targets with deadbands and the total value should remain as $\pm 0.5\%$ of base revenue. To support convergence and ensure the same focus on customer satisfaction across all networks, the incentive should be designed so that all GDNs can receive a reward for improving service (or equally all should be able to receive a penalty for deterioration in performance).

Has the incentive rewarded exceptional performance?

Since the beginning of RIIO-GD1 we have seen customer satisfaction increase across all services in all our networks. GDNs are delivering performance that should be recognised as exceptional, comparing very favourably to other utilities companies, commercial market leaders like Amazon and the UKCSI benchmark.

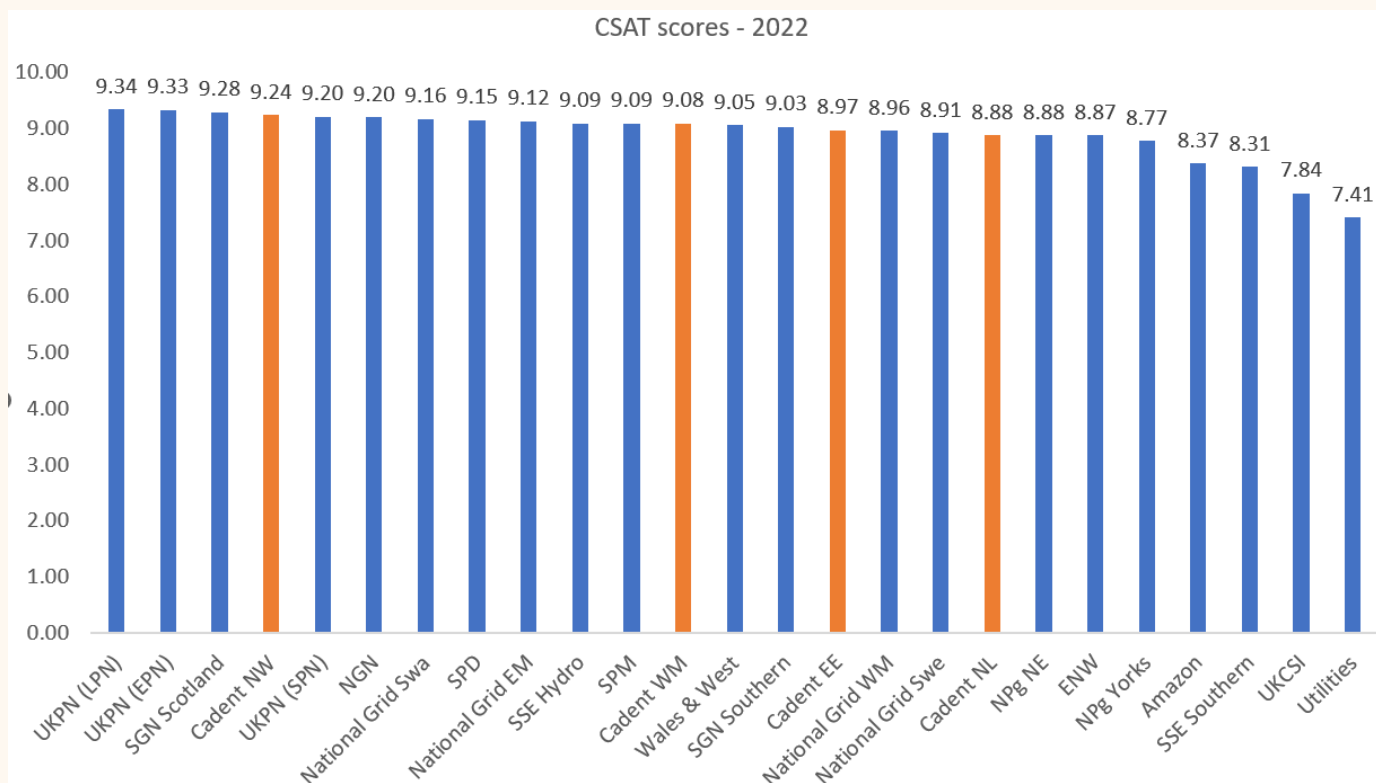


Figure GDQ35.1: Comparison of Cadent customer satisfaction to other companies, sectors, and benchmarks.
Source: TTI global

Ofgem rightly highlights that, as a result, GDNs have been rewarded £7.55m (£0.28 per customer on average) and £9.53m (£0.35 per customer on average) in 2021/22 and 2022/23 respectively.² These rewards demonstrate the power of financial incentives to influence GDNs' behaviours and reflect the benefit obtained by customers.

Should customer satisfaction continue to be incentivised in RIIO-3?

We agree with the SSMC that GDNs are providing a high level of service and that it is unlikely that they can continue to deliver ever higher levels of performance on customer satisfaction. We also recognise that there are some even higher priority areas, such as reducing Shrinkage and supporting the transition to Net Zero, where the benefits of financial incentives could be focused.

However, customer satisfaction continues to remain critically important and should continue to be incentivised in RIIO-GD3. Customer expectations will continue to evolve, notably in the wake of the energy transition and digitalisation. Companies will need to keep improving and evolving their service to maintain current scores. There are also areas where there is the potential for improvements, for example planned work where average scores across networks since 2019/20 are below '9/10'. This is shown in figure GDQ35.2 below.

² The amount per customer is calculated based on 27.2m customers across the eight GDNs.

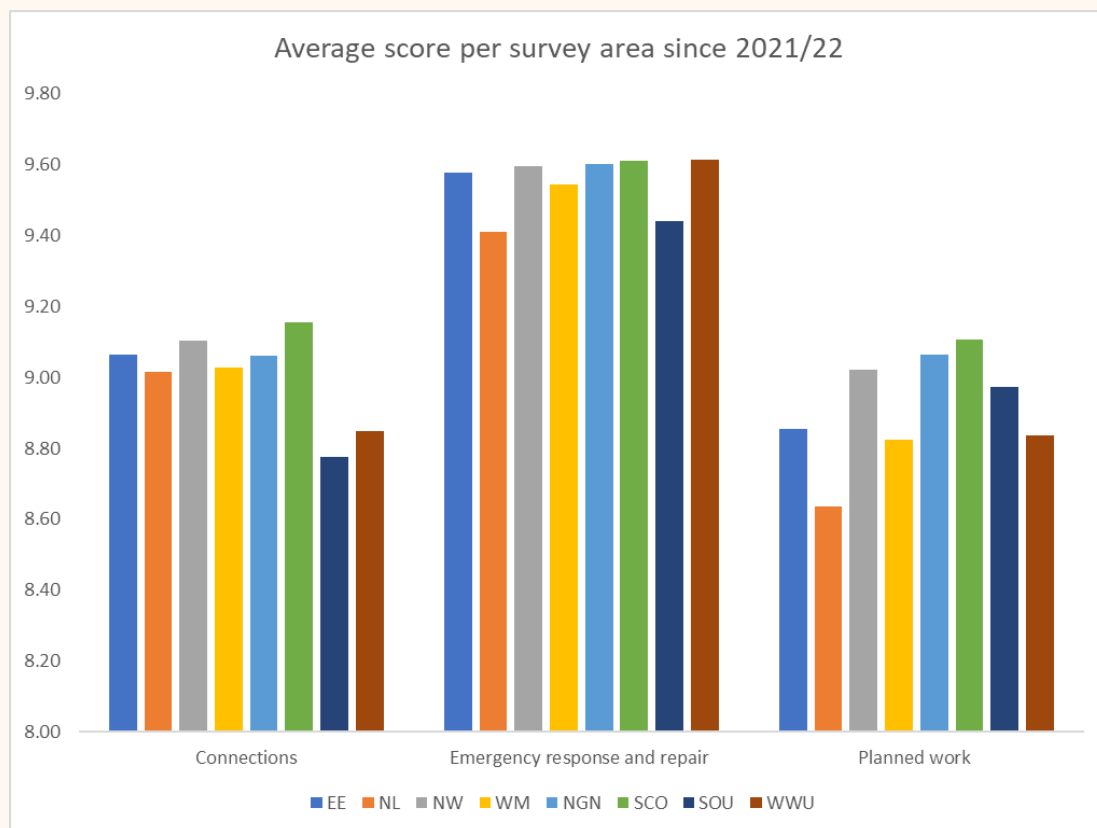


Figure GDQ35.2: Average customer satisfaction score by survey area

How can the incentive encourage continued convergence?

We agree with the objective, set out in the SSMC, that consumers should be able to expect consistent levels of satisfaction irrespective of where they live and that convergence across the GDNs should be encouraged.

As can be seen in the graphs below, taken from the GD Annex of the SSMC, the customer satisfaction incentive has delivered convergence across all three services, so that customers experience much more consistent levels of service. The evidence demonstrates that there has been greater convergence the longer the incentive has been in place and there is no reason to believe that this trend would not continue under the current design of the incentive.

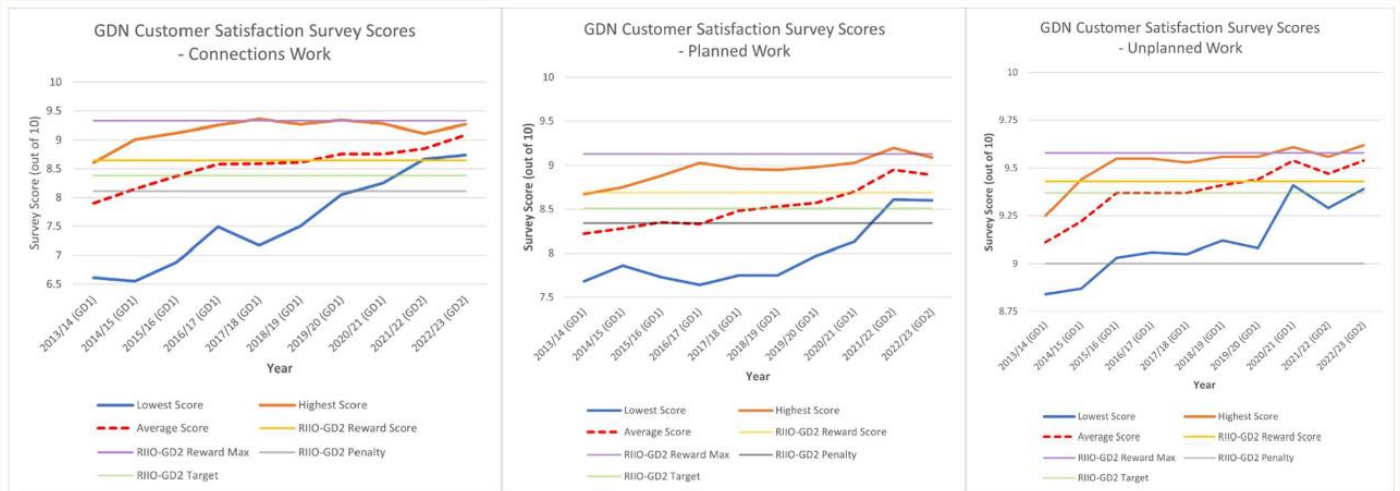


Figure GDQ35.3: Convergence of GDN customer satisfaction over time

The incentive has encouraged collaboration across network companies throughout RIIO-GD1 and RIIO-GD2 as it uses common static targets and deadbands, meaning that all GDNs can be rewarded for delivering improved service. This collaboration has included establishing a GDN Best Practice Working Group. If GDNs were in competition with each other, such as if a relative or dynamic design were used, then this collaboration would stop as companies need other networks to fail so that they can be successful, potentially leading to greater divergence in the service that customers receive.

Paragraph 4.47 of the GD Annex of the SSMC highlights a concern that a company with multiple networks may be disincentivised from focusing on customer satisfaction equally across their networks. There is no evidence to support this concern. We have four networks and since the beginning of RIIO-GD1 our customer satisfaction scores have converged as shown in Figure GDQ35.4 below. We have responded equally to the incentive across all of our networks so to try and deliver exceptional customer service.

However, if a relative or dynamic incentive were introduced then it could disincentivise companies with multiple networks from focusing on customer satisfaction equally across all areas. For example, if a relative incentive was used and it was only plausible that half of a companies' networks could achieve a reward, then if the incentive was based on a percentage of revenue the company could focus efforts on the network(s) with the highest revenue, as that way they could more than counter the penalties of the other network(s) and end up with an overall upside at a company level.

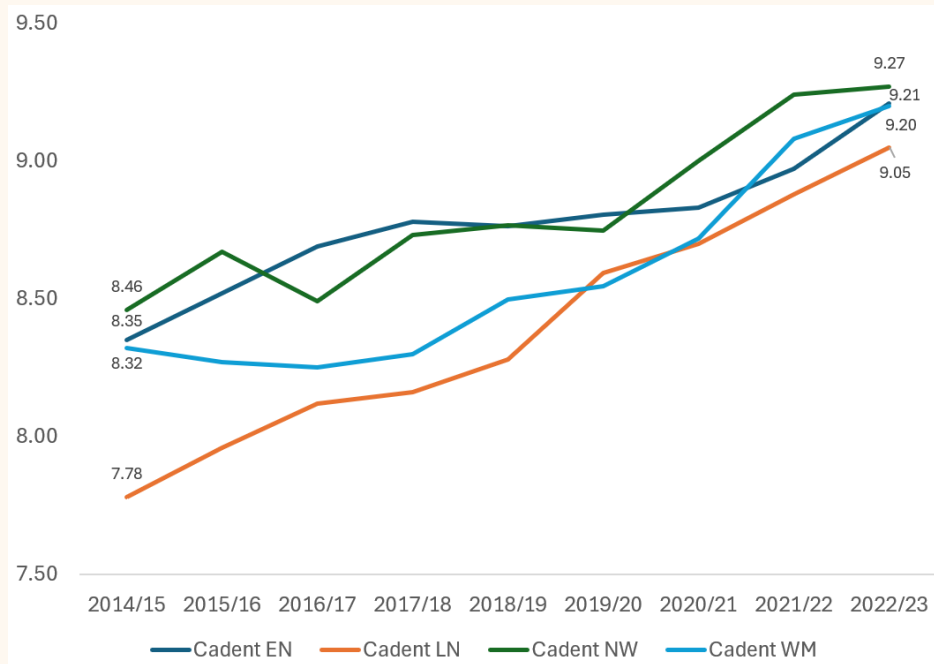


Figure GDQ35.4: Customer satisfaction score across our networks

Assessment of SSMC Options

Of the four options outlined in the SSMC, we support the one to maintain the RIIO-GD2 incentive design with rewards and penalties available up to $\pm 0.5\%$ of base revenue, deadbands, and common static targets.

The current incentive design has been hugely successful and is the option that best achieves the objectives outlined in the SSMC. For RIIO-GD3, maintaining this design will incentivise GDNs to at least maintain current levels of performance and pursue improvements, for example in currently weaker areas and/or as a result of innovation and digitalisation.

Later in this response we explore some broader options around the weightings between services, consideration of the removal/addition of services from/to the incentive and the potential for incentive asymmetry on specific services. However, on the existing services some adjustments that should be made are:

- The targets should be recalibrated taking account of RIIO-GD2 performance;
- The deadbands should be retained but in areas of high performance should be asymmetrical and narrowed on the upside. This would ensure that GDNs can still be rewarded if they find new ways to increase customer satisfaction even further;
- The weights of surveys could be reviewed. Given the data shown above, a greater weight could be given to planned work to incentivise improvements in this area. This would also make sense from a customer perspective as planned works involve longer and larger disruptions than connections;
- As we note in our response to GDQ45, Ofgem should also consider the impact that the removal of the DLCA could have on customer satisfaction. An increase in connection costs could increase customers' expectations and decrease customer satisfaction. It could also further reduce the volume of connections we undertake each year, and therefore the number of customers we can survey on connections.

We do not support the other three options set out by Ofgem. Our views are summarised in the table below.

Option	Observations
Option 2 – Asymmetric incentive	<p>We do not see a rationale for introducing an asymmetric incentive, which would further skew the incentive regime toward penalties. The current symmetrical incentive, with deadbands, effectively ensures that GDNs are indeed penalised if performance declines and rewarded if it increases.</p> <p>There is also no evidence presented by Ofgem supporting this policy, for example that customers would value more a decline in performance than an increase.</p>
Option 3 – Penalty only	<p>This option could support the SSMC priority of consolidation of good customer satisfaction. However, it would not incentivise GDNs to respond to customers' changing expectation or to seek further improvements which could be secured from innovation or from other service areas.</p> <p>This option could also support the objective of convergence; however, this is likely to around the minimum performance level set by the incentive. This could effectively level down performance.</p> <p>If Ofgem did select this option, the penalty level should be based on historic data and at least be set at a level that does not penalise good service.³ It should also include a deadband to ensure that small or temporary declines in performance are not penalised in a disproportionate way.</p> <p>Finally, to avoid further skewing the incentive package toward penalties and maintaining the balance of the overall price control, positive incentivisation could be redirected towards higher value areas such as shrinkage reduction.</p>
Option 4 – Relative targets	<p>We strongly oppose the introduction of relative rewards and penalties to “emulate the competitive drivers of an open market”.</p> <p>Firstly, as shown above, GDNs already deliver higher customer satisfaction than companies operating within the “competitive drivers of an open market”, including market leaders such as Amazon.</p> <p>Secondly, this policy proposal is not consistent with Ofgem’s acknowledgment that companies are unlikely to deliver ever higher performance. As performance is unlikely to keep improving, this proposal would result in penalising GDNs even if they maintain currently high levels of customer satisfaction. By way of example, the lowest performers currently achieve 8.99 on connections (West Midlands), 9.55 on emergency response and repair (London network) and 8.70 on planned work (London network). These scores (and even better scores if more than one network is penalised) would be penalised under this option.</p> <p>Furthermore, there is a risk to disincentivise improvements for example if a network (or a group of networks) expects to receive penalties despite their best efforts and decide to consider the penalty as a “cost of doing business” and refrain from investing in customer satisfaction.</p> <p>Thirdly, this proposal would reduce cooperation in the sector at a time when the industry is facing a major culture shift to enable whole system collaboration. The move will be at the detriment to consumers and Ofgem’s objective for convergence. Instead of collaboration and openness to share that exists today in the form of close working GDN relationships and regular open dialogue, there will be a more guarded approach that stifles innovation and best practice sharing.</p> <p>In sum, if Ofgem wants to incentivise GDNs to improve performance, we think that maintaining the current incentive regime is the best way forward.</p>

Table GDQ35.1: Cadent views on Ofgem options

³ Ofgem recognised in the RII0-GD2 SSMD that GDNs were delivering high levels of customer satisfaction by the end of RII0-GD1 (https://www.ofgem.gov.uk/sites/default/files/docs/2019/05/riio-2_sector_specific_methodology_decision_-_gd.pdf para 2.183)

Further options to be considered

We have identified a number of options, summarised below, that should be considered to ensure that the customer satisfaction incentive remains relevant and focuses on key areas for customers. We will continue to work on developing options with our Independent Customer Challenge Group and would welcome further industry discussion at an Ofgem working group.

Connections

Given the proposed removal of the Domestic load connections allowance (DLCA) and the likely drop in connections volumes, consideration should be given to removing this survey from the incentive.

Once the number of connections drops below an agreed level then this survey could be removed from the incentive. However, the survey could remain in place so that there remains a reputational incentive to provide good service, but also in case volumes increase again in the future at which point the survey could be included again within the incentive.

In the event of including a mechanism for the connections survey to be removed from the incentive during RIIO-GD3, a decision will need to be made on if this removal would see the reduction in the value of the overall incentive (for example in the current regime removing $\pm 0.17\%$ base revenue from the incentive value range) or if the value associated with connections would be reallocated to other elements of the incentive (for example in the current regime the value associated with both emergency response and planned works increasing to $\pm 0.25\%$ base revenue).

Disconnections

Under all future energy scenarios, it is recognised that there will be increased disconnections from the gas network. However, customers that pay for disconnection from the gas networks are not currently surveyed to understand and improve their experience.

As such, consideration should be given to introducing a new survey for paid for disconnections from the gas network. Volumes are currently low, but the survey could begin on a reputational basis and when volumes exceed a pre-agreed level the survey could be included within the customer satisfaction incentive. In this scenario there may be need for a pilot period to set the baseline targets.

Paid for disconnections are notably different to new connections or service alterations, with very different customer drivers. As such, they should not be included within the connections survey. Customers are likely to have very different pre-existing views of the need to pay for a new service versus the need to exit an existing service. As such, disconnection customers are likely to have lower satisfaction than the existing, very high, satisfaction of connections customers.

In the event of including a mechanism for a disconnections survey to be added to the customer satisfaction survey during RIIO-GD3, a decision will need to be made on if this addition would see the increase in the value of the overall incentive (for example in the current regime adding $\pm 0.17\%$ base revenue to the incentive value range) or if the existing overall incentive value would be spread over an increased number of services (for example in the current regime each survey being worth $\pm 0.13\%$ of base revenue).

Industrial and Commercial (I&C) customers

Currently the customer satisfaction survey is focused on domestic customers. Consideration should be given to the introduction of a specific tailored survey for I&C customers. This would recognise the continued key role of the gas network for industry through and beyond the energy transition.

If a new survey was to be introduced, then a pilot to set a baseline target would be needed. A decision would also be needed to if this would increase the overall value of the customer satisfaction survey beyond $\pm 0.50\%$ base revenue, or if the existing value would be allocated across the increased number of surveys.

Worst Served Customers

Whilst the existing customer satisfaction demonstrates that the GDNs are providing exceptional service to their customers, some pockets of lower performance remain. A metric could be introduced within the customer satisfaction incentive for RIIO-GD3 to address this lower performance, so that all customers get a consistent high level of service. This could further support convergence in performance.

When looking at current performance we still receive the occasional '1/10' score and there are sub-questions within the surveys where we do not score as highly as we do overall.

We do not currently have any worked up options for how a metric could work to follow up on '1/10' scores, however we will continue to work with our Independent Customer Challenge Group to identify ideas and will feed any that are developed in to Ofgem.

The area where we continue to receive less positive scores than the overall experience is on reinstatement within the planned work survey. As the overall satisfaction score is lower for planned works than emergency response or connections, it should be considered if greater weight is given to this service.

It should also be considered if the sub-question on reinstatement within the planned works survey becomes an incentivised question in addition to the 'killer question'. Using the current regime as an example, the emergency response, connections, planned works and the reinstatement question could each be valued at $\pm 0.13\%$ base revenue.

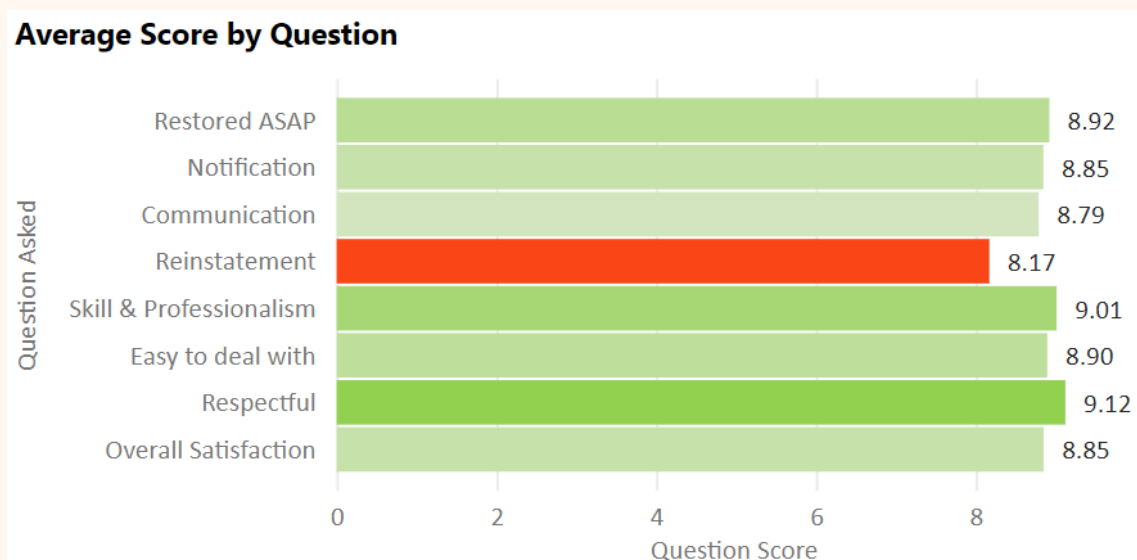


Figure GDQ35.5: Cadent planned work customer satisfaction scores

If a new metric or survey was to be introduced in this area, then a pilot to set a baseline target would be needed. A decision would also be needed to if this would increase the overall value of the customer satisfaction survey beyond $\pm 0.50\%$ base revenue, or if the existing value would be allocated across the increased number of surveys.

Asymmetrical incentive values by survey

Currently all three surveys are valued equally within the incentive (essentially $\pm 0.17\%$ of base revenue each).

The SSMC explores whether the weightings between surveys could be adjusted, and we support this review. However, consideration should also be given to if each survey needs to have a symmetrical range.

Using the existing regime as an example, satisfaction on emergency and connections are close to '10/10', but maintaining high performance is important so the incentive ranges could be amended to reflect this. The upside incentive could potentially be reduced to $+0.13\%$ on emergency and connections, recognising there isn't much further improvement plausible, and the upside on planned works could be increased to $+0.25\%$ to recognise there are still further improvements that could be achieved. But the downside could remain as -0.17% on each survey recognising the equal value in at least maintaining performance.

GDQ36. What are your views on how the complaints metric can ensure customers' complaints are resolved quickly and effectively?

We agree with Ofgem's proposal to maintain the complaint metric as a penalty only mechanism, based on the positive results it has delivered in terms of GDNs' performance in this area.

The current mechanism achieves the right balance in terms of incentivising GDNs to reduce complaints while not disincentivising them to log complaints in the first place. It is important GDNs thoroughly log and track complaints to ensure that any issues experienced by customers are fixed and that appropriate lessons are learnt internally. We have therefore taken a very encompassing approach to complaints where a complaint means "any expression of dissatisfaction made to an organisation, related to any one or more of its products, services or the manner in which it has dealt with any such expression of dissatisfaction, where a response is either provided by or on behalf of that organisation at the point at which contact is made or a response is explicitly or implicitly required or expected to be provided thereafter".⁴

This means we log a large number of complaints and thoroughly track our customers' journey with us. In turn, this can lead to a situation where we have large number of complaints, even as our customer satisfaction remains high. For the reasons explained, we do not think this is problematic. It means GDNs are tracking complaints, which is a positive thing.

As Ofgem notes, performance on complaints across the industry is good and we agree with Ofgem that "the existing complaints metric score of five is already reasonably stretching for most GDNs"⁵. Increasing the target further could lead to perverse outcomes, for example that GDNs do not log complaints or make decisions that are not optimal for customers for the purpose of closing out a complaint. Therefore, the target should be the same of RIIO-GD3.

⁴ Ofgem, 2008, Complaints handling standards

⁵ Para 4.61 of the RIIO-3 SSMC, GD Annex

We agree with the use of a static target. We agree with Ofgem that the alternative, to introduce a dynamic target, would introduce unnecessary complexity and could reduce transparency.

We do not see a rationale for reporting the total volume of complaints received as a percentage against the number of customers served. Both volumes and workloads are reported separately within RRP, and we do not see that reporting of the two facets will lead to any change in performance or provide tangible benefit to consumers. It is also very difficult to compare performance on complaint volumes across GDNs as different companies will define complaints differently.

We think the current timeframe indicators broadly work and we do not see an urgent need for change. One area Ofgem could consider is the D+31 timeframe indicator. Complaints which last longer than 31 days generally reflect fundamental difference in position between the GDN and the customer and often necessitate an ombudsman process. The D+31 timeframe indicator is therefore unlikely to impact the speed at which GDNs solve these complaints. This indicator could be replaced with an indicator at D+14, which would incentivise GDNs to solve faster tricky complaints (but which do not require an ombudsman process).

Finally, we do not object to reporting the complaint metric for customers on the PSR separately. However, the rationale for doing this is unclear and we note that we already do this under C-SAT which shows similar levels of satisfaction.

GDQ37. What changes, if any, are required to the GSOPs?

Guaranteed standards relate to the minimum standards of service all customers should receive and were first introduced for gas distribution in 2002. GSOPs ensure all customers receive a defined minimum standard of service. Where this service is not provided, customers are compensated. GSOPs are meant to protect customers rather than to incentivise performance above a minimum level.

We are supportive of the continuation of GSOPs as a mechanism to protect and compensate consumers when minimum standards customers expect are not met, and we agree that a major review is unlikely to be possible ahead of RIIO-GD3

However, there is value in undertaking a full review of existing GSOPs during RIIO-GD3, ready for implementation in RIIO-GD4. Evidence suggests that there is a disconnect between GSOP performance and customer satisfaction, suggesting that some GSOPs may no longer be aligned to customer expectations. This misalignment is likely to increase through the energy transition as customer requirements evolve further.

One area that does require consideration ahead of RIIO-GD3 relates to the Overall Standards of Service associated with Connections. As noted in the SSMC document, connection volumes are likely to fall substantially in all future scenarios and the removal of the DLCA and FPNES are likely to encourage this trend. As we note in our response to GD45 below, this could result in connections volumes being too small to be statistically robust. For example, if the total volumes are very small, failing to meet the standards prescribed in the Overall Standards of Services (OSOS), as set out in Standard Special Condition D10 of the Gas Transporter licence, in only a few instances, could suffice to make us non-compliant. Therefore, we think the OSOS standards relating to connections should be removed to avoid companies facing an enforcement action for isolated incidents affecting a very small number of customers.

More generally, there are opportunities to improve the management of GSOPs and customers' service journey, including in case of failure. Currently, GDNs have limited access to data from other GDNs or suppliers. This makes it difficult to contact customers and initiate payments. Having access to customer data from suppliers could create significant opportunities for GDNs to improve customer journeys and the management of GSOP.

GDQ38. What are your views on our proposed options for the unplanned interruption ODI-F?

We agree that the unplanned interruption ODI-F should be retained and that Cadent networks should continue to have specific MOBs and non-MOBs measures. These measures should maintain the minimum standard and excessive performance levels set for RIIO-GD2. These standards should be network specific, noting that variance in network geography, asset base etc. leads to variance in interruption durations and also that GDNs have not historically been reporting on a consistent basis.

Combined vs separate MOBs/non-MOBs measures

We agree that Cadent networks should continue to have specific MOBs and non-MOBs measures. Whilst we have no preference on whether other GDNs should retain a combined measure or adopt specific MOBs and non-MOBs measures, our experience is that, due to their nature, MOBs interruptions can disproportionately distort a combined view of performance. When using a combined measure even changes in MOBs/non-MOBs workload can impact the perception of performance. For example, if a GDN found an innovation that meant they could avoid 50% of unplanned supply interruptions to non-MOBs, this is likely to make their performance appear worse, even though it is recognising that keeping customers on gas is a better outcome. This is because longer MOB interruptions would make up a greater percentage of the unplanned interruptions and therefore increase the average duration.

Indeed, even when separate measures are used the perception of performance can be distorted by changes in workload. For example, if an innovation was found that meant more shorter MOBs unplanned interruptions could be avoided then the normally longer interruptions would make up a greater percentage of the unplanned interruptions and therefore increase the average duration. This happened in our London network, where during RIIO-GD1 we implemented innovations and process improvements which resulted in a transformation from around 75% of public reported escapes in MOBs leading to unplanned interruptions to only around 25% by the end of that price control period. This has meant that the “harder jobs” make up more of our unplanned interruptions and has negated some of the overall average duration reductions that we have also driven.

Exclusion of Major Incidents

We agree with continuing to exclude major incidents from this performance measure. Major incidents occur infrequently and are predominantly driven by third party damage that is outside of GDNs control. As such, when and where they occur, as well as the extent of the action required to resolve them, is unpredictable.

It is impossible to predict where and how often major incidents will occur, even using historic data. For example, in GDPCR1 Cadent experienced five major incidents in the North West (average of one per year) and four in our Eastern network (average of just under one per year). Based on this historic evidence it could have been expected that both networks would have experienced around eight major incidents during the eight-year RIIO-GD1 period. However, North West actually experienced only one, whilst Eastern experienced thirteen.

The type of action that will be required to respond to a major incident, and therefore the likely duration, is also unpredictable and dependent upon on a wide range of variables that are difficult to robustly forecast or model, especially given the small data set available. These variables include the number of customers impacted, the configuration of the GDNs assets affected, the weather, the local geography and the location and/or resilience of other organisations assets (i.e. railways, motorways, electricity distribution networks etc.). Given these wide range of variables, there is low statistical comparability in the average durations for major incidents. For example, in the first six years of RIIO-1 the average

duration for major incidents ranged from less than five hours to just over five days. As such, there would be no robust way in setting average duration standards for major incidents.

Performance levels

In terms of the performance level, we support the fourth option proposed by Ofgem: to retain the RIIO-GD2 levels set for MPL and EDLs. The exception to this may be if individual networks change the measure used for RIIO-GD3, i.e. combined or separate MOBs/non-MOBs, and they do not have sufficiently robust data from RIIO-GD1 to enable to use the same period dataset to set the minimum standard.

The purpose of the output, as set out in the RIIO-GD2 SSMD, is to prevent unacceptable performance levels. As such, the minimum standards for RIIO-GD2 were set at acceptable performance levels by Ofgem and to protect customers against deterioration in performance from this level. Also, when we tested different performance levels with customers during the RIIO-GD2 process, the majority preferred the lower cost option to maintain acceptable levels of performance.

GDQ39. What are your views on the options we have set out for the Collaborative Streetworks ODI-F?

We agree that the Collaborative Streetworks ODI-F should be retained for RIIO-GD3 as it has delivered significant benefits to consumers since its introduction. In 2022/23 we have delivered six projects in our London network, reducing disruption by 291 days. Across all of our collaboration projects delivered, including those that did not qualify for the incentive, we have achieved 1,957 days of avoided disruption.

Given these benefits, we propose that the incentive should be extended to all GDNs from RIIO-GD3. Given this proposed extension, the use of a flat rate incentive would be the simplest approach for RIIO-GD3. There would also be significant value in removing the restriction on projects under 0.2km in length.

We explain these three proposals to develop the incentive further below.

1. Expanding the collaborative streetworks incentives to the rest of Great Britain

In RIIO-GD2, Ofgem said the learnings from this collaborative streetworks incentive could inform a mechanism for all GDNs at RIIO-GD3.⁶ Our track record now demonstrates that very significant benefits can be delivered to customers by better collaborating on streetworks. We also know from our RIIO-GD2 customer engagement that minimising the disruption caused by our works is a priority for our customers. In RIIO-GD2, customers told us clearly that while they understand the compulsory nature of our works, they expect us to consider how we can phase the work and minimise the disruption, including through collaboration and improved communication.⁷

The UK Government has also recently published plans to clamp down on overrunning streetworks, which the collaborative streetworks incentive supports.⁸ We also note that RIIO-ED2 and PR24 (based on the evidence presented by companies in their business plans) will lead to a much greater scale of investments and therefore streetworks in the coming years, which reinforces further the benefits of collaboration.

⁶ RIIO-GD2, Final Determinations, GD Annex, para 2.95

⁷ Cadent, Customer engagement report 2018/2019, page 7

⁸ [Government announces new long-term plan to back drivers - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/news/government-announces-new-long-term-plan-to-back-drivers)

There is therefore a strong rationale to extend the collaborative streetworks incentive to other networks. Ofgem has an opportunity to lead the industry and other regulators in this area. Streetworks collaboration impacts the whole system and benefits all consumers and should be pursued by all utilities to minimise disruption.

Currently, the collaborative streetworks incentive has two tracks to qualify projects:

- Minimum requirements approach, where projects directly qualify for the incentive if they meet certain requirements. In this case, the involvement of the GLA or another third party is not necessary;
- Projects of strategic importance can also qualify for the incentive even if they do not meet the minimum requirements. In this case, the GLA needs to confirm that the project is of strategic importance.

We think this system has worked well and could be expanded to the other major cities in the UK. We have undertaken positive engagement with key stakeholders across all of our regions, where there has been notable expression of interest in this expansion. We will continue with this regional engagement ahead of SSMD and will continue to feed stakeholder views into Ofgem.

Outside of major cities, a simpler mechanism could apply where only projects which meet minimum requirements could qualify for the incentive. This would remove the need for a third party while allowing companies to undertake projects which deliver benefits for customers in those areas too. The minimum requirements will ensure that the projects undertaken will indeed deliver benefits.

2. We support retaining a flat incentive rate for RIIO-GD3

We would support the continued use of a flat incentive rate for RIIO-GD3. This is a simpler option to implement, and it would be more replicable across all networks than option 2.

However, there are ways that could be explored to make the incentive rate more representative of the benefits delivered. A high-level summary is presented in the figure below. These options would make the incentive value more representative of the benefits delivered but would require a meaningful amount of work to design and then implement. This could be developed during RIIO-GD3, with an objective that it could be ready for implementation at RIIO-GD4. As an example, we think that the incentive value could be based on bands, based on days saved, the type of collaboration or whether the project only meets minimum requirements or has been recognised as of strategic importance. This could be more reflective of the benefits delivered, and not too sensitive to limitations we may identify in estimating days saved or benefits.

Option name	Maintain flat incentive rate	Value bands	Value scaled according to density	Dynamic rate based on the benefits delivered
	1	2	3	4
Description	Retain a flat incentive rate but update the rate to take account of the social value delivered by projects under RIIO-GD2.	Incentive rates would be set per bands, for example based on: - number of days saved (e.g., 10, 20, 50, etc); - the type of project delivered (minimum requirements or strategic project); and - the level of collaboration companies engaged on	The incentive rate would be based on the number of days saved, and then scaled according to the traffic and or population density in the area.	Dynamic incentive rate based on the social benefits of individual projects. This could be based on the GLAs monitoring and evaluation tool or based on the number of days saved.
Pros	<ul style="list-style-type: none"> • Simpler to define and maintain • Aligned with current incentive value in other networks (e.g., RIIO-ED2) • Upfront clarity on the reward available • No third party needed to administer 	<ul style="list-style-type: none"> • Relatively simple to define and implement • Less sensitive to limitations in our ability to count days saved or benefits • Replicable across networks 	<ul style="list-style-type: none"> • More representative of benefits delivered • Replicable across networks 	<ul style="list-style-type: none"> • Most reflective of benefits delivered by individual projects
Cons	<ul style="list-style-type: none"> • Does not reflect the actual benefits delivered by individual projects 	<ul style="list-style-type: none"> • Appropriate values would need to be defined for each band • Less reflective of benefits than option 4 • Third party potentially needed to define the appropriate band earned by networks 	<ul style="list-style-type: none"> • More complex to define – there would need to be a reliable method to count days saved and monetise it, and to measure and monetise traffic and population density • Third party needed to perform the calculation and award a reward • Lower upfront clarity on the reward available 	<ul style="list-style-type: none"> • Very complex to define (e.g., to count and value days saved) • Burdensome to implement as the incentive reward would need to be calculated for each project, building on a long list of inputs • Third party required to administer • No upfront clarity on the reward available

Figure GDQ39.1: Options for the collaborative streetworks incentive rate

3. The caps should be adjusted to ensure they do not act as a blocker

It is now established that collaborating on streetworks projects can yield significant financial and social benefits. We therefore see no reason to constrain our capacity to undertake collaborative streetworks. In addition, the learnings obtained since RIIO-GD2, the participation of a larger number of utilities in the GLA scheme, and the scale of investment programmes planned in the electricity and water sectors in the coming years mean that we can considerably increase the scale of collaboration and the benefits delivered. Therefore, it is essential that the collaborative streetworks incentives allows us to scale up collaboration and delivers the benefits our customers deserve and expect.

In RIIO-2, Ofgem applies an annual cap set at 0.5% base revenue pre-TIM for each network area, which we think could act as a blocker to scaling collaboration. We make the following propositions:

- **We think Ofgem should apply the cap post-TIM to allow us to carry out more projects.** The current cap means that we can undertake up to 9 projects in our Eastern network (which contains East London) and 7 projects in our London network per year. If the cap was set post-TIM, we could conduct twice as many projects; and
- **The cap should be set over the price control rather than per year.** The rationale for this seems weak as it should not matter if collaboration projects are delivered on a consistent pace over the price control or if there is a ramp up from the first to the final year. Moreover, the experience so far indicates that collaboration does tend to ramp up over the price control, as projects can take several years to develop and implement. This means that we are likely to underperform against the cap in the early years of the price control but to reach the cap in the final years of the price control. Applying the cap over the price control would therefore be better aligned with our processes and provide more flexibility to companies.

4. The requirement for projects to have a minimum length of 0.2km should be removed

The requirement that collaboration projects have a length of at least 0.2km to qualify for the incentive is arbitrary and acts as a blocker to taking initiative to reduce the disruption caused by smaller works.

For example, we estimate that collaboration in connections, which are typically small projects which would not meet the minimum length requirement saves on average more than four days per connection.

Ofgem could consider replacing this length requirement with a requirement based on the density of population or traffic. In this case, only projects which take place on areas densely populated or with high traffic could count. The requirement to qualify projects would therefore be based on whether the project would deliver benefits or not, rather than on a minimum length.

GDQ40. What are your views on whether the new, large load connections re-opener is still needed in RIIO-GD3?

As in RIIO-GD2, we continue to think the new large load connections re-opener is needed in RIIO-GD3.

This activity is predominantly industrial customer-driven and hence no specific reason to suggest they will decline, and they are still uncertain by nature. In addition, the costs incurred can vary greatly and are dependent on the type of project the connection and reinforcement requirement support. So far in RIIO-GD2, we have seen a large variety of projects, including those relating to power generational, CNG filling stations, industrial estates and new housing estates.

Therefore, we think that the reasons which led Ofgem to introduce this re-opener in the first place still stand.

GDQ41. What are your views on whether the specified streetworks costs re-opener is still needed in RIIO-GD3?

We think that the specified streetworks costs re-opener is still needed in RIIO-GD3.

Over the RIIO-GD2 period we have seen significant increases in costs driven by the increased number of streetworks schemes in place across all our networks with many local authorities introducing new ones over the period. Alongside this, where schemes have been put in place, we have also seen greater propensity for charging as well as increased levels of charging by Local Authorities/Highway as they mature their operational approaches of managing schemes. Furthermore, streetworks costs moving into RIIO-GD3 remain subject to uncertainty given the regular implementation or review of relevant legislations and introduction of new schemes.

For example, we note that in October 2023 the Government announced a consultation on streetworks reform that is open until March 2024 so it is unlikely that GDNs will have a clear view on the impact of these changes until after business plans have been submitted and probably into the RIIO-GD3 period. This includes changes to the Fixed Penalty Regulations are also expected which will increase these costs.

There will also be adoption of further Lane Rental Schemes as part of the Government's drive for better street and road works. There are currently two schemes within our London network area, however the Department for Transport have highlighted that they envisage onboarding ten Highway Authorities a year, which will have cost implications for GDN activities nationwide.

There is generally a lead time of around 18 months from Highway Authorities stating their intention to deploy a scheme to it going live, as such there could be many schemes not yet identified that will come into effect during RIIO-GD3. Therefore, we think that the reasons which led Ofgem to introduce this re-opener in the first place still stand.

In our London network we are also seeing an increase in controlled parking zones, leading to parking bay suspension charges. However, with all council operating different schemes it is hard to forecast

these costs. We are also being charged for bus stop suspensions and diversions in London and expect that this type of scheme could be adopted in other major cities across the country.

As such, the uncertainty that was present in RIIO-GD1 and RIIO-GD2 remains and therefore a well-defined streetworks re-opener is still required for RIIO-GD3.

In addition, the approach taken to determine streetworks allowances for RIIO-GD2 (see our response to GDQ61), does not take account of several of the main reasons that have led to increased costs within the RIIO-GD2 period (e.g. more schemes being in place and increased propensity and costs of permitry). As such, we also believe the scope of the specified streetworks re-opener for RIIO-GD3 should be widened to allow for recovery of additional costs driven by factors not accounted for in the process of setting ex-ante allowances.

GDQ42. What are your views on our proposal to remove the Fuel Poor Network Extension Scheme in RIIO-GD3?

We support Ofgem's proposal to remove the Fuel Poor Network Extension Scheme, based on the significant reduction in demand for the scheme and the relative high administrative costs associated with it. However, we also note that during the RIIO-2 period the number of customers living in or close to fuel poverty has increased materially. The FPNES was established as a key support programme to enable people living in fuel poverty access to the cheapest form of heat for their homes – gas. In almost all situations, gas remains cheaper than alternative fuels and therefore, in removing the FPNES, there is less overall scope and funding to support households living in fuel poverty.

During RIIO-GD2, some of the FPNES proposed funding was reallocated into the VCMA and Cadent, along with other GDNs have been able to provide a range of additional services to support customers living in fuel poverty. In some respects, these additional services compensate for the removal of the FPNES, finding other ways to help households afford to balance the priorities of heating their home vs. other competing needs.

As such, as detailed in our response to GDQ32, we believe that the VCMA funding should be increased beyond Ofgem's proposed level, noting that without the FPNES there is a need for GDNs to go further, through other initiatives that directly support customers living in fuel poverty.

GDQ43. What are your views on our proposal to remove the consumer vulnerability ODI-R in RIIO-GD3?

We support the proposal to remove the customer vulnerability ODI-R in RIIO-3. Whilst the additional granularity in reporting has seen a significant improvement in performance against the metrics being reported, we believe that these are very much embedded into business-as-usual activities. In addition, our customers and many of our stakeholders have told us that they appreciate this sort of reporting, but that they can find it difficult to access and interpret the formal regulatory reporting packs. As such we intend to continue to provide regular reporting on a number of metrics (including these) in our annual sustainability reporting process, website, annual report and other ad hoc events in this space.

It is not essential to have an ODI-R in place to govern this, which we see, simply, as good practice.

GDQ44. How can the annual VCMA event be improved?

The VCMA event has been attended by hundreds of key stakeholders who have an interest / involvement in the delivery of vulnerability programmes by network businesses. They provide a

platform to not only showcase highlights, but also seek expert views from a wide range of perspectives to ensure a level of continuous improvement is applied to these programmes.

Feedback was sought at the end of each event to date and will continue to be undertaken. In hosting the second event, Cadent specifically referenced the feedback and demonstrated how it has refined the event to take it into effect. We believe that this is good practice and should be followed by whoever hosts each event. Rather than develop a list in response to this consultation, we believe that the wider stakeholder feedback received during the events to date should be reviewed and fed into the design of guidance for RIIO-GD3.

Our Customer Challenge Group agree with Cadent that the metrics shared at these events should, where possible be highly tangible – i.e. money saved directly for customers, jobs created, numbers of customers supported, etc. Whilst metrics such as social return on investment is a useful secondary measure, it points to benefits that ‘might’ materialise, as well as those delivered.

GDQ45. What are your views on our proposal to remove the DLCA, and do you see any challenges that might arise if it were to be removed?

We submitted data to the joint DESNZ, Ofgem and HSE review of the domestic gas connections regime and understand that the conclusion is for the DLCA to be removed. On this basis, our response to this question details the impacts of this decision upon customers as well as the regulatory framework and, therefore, what action should be taken for RIIO-GD3.

In summary:

- The scope of the VCMA UIOLI allowance should enable customers in fuel poverty to access financial support to fund a gas connection. See our response to GDQ31-34.
- The Overall Standards of Service (OSOS) related to connections, set out in Standard Special Condition D10 of the Gas Transporter licence, should be removed given the decision to remove the DLCA and the likely reduction in connections (see our response to GDQ37).

Consideration should be given whether the connections element of the customer satisfaction incentive should be turned off during RIIO-3, if volumes fall beneath a pre-determined threshold (see our response to GDQ35).

We explain our views further below.

The removal of the DCLA will significantly increase connection costs, and encourage further the decline in connections

In RIIO-GD2, 82% of our connections are eligible for the DLCA.⁹ We can therefore expect the large majority of our connections to be impacted by its removal. Connections can be requested by either developers or individual domestic customers.

We estimate that connection costs will increase by 54% on average. We have estimated the impact of the removal of the DLCA on costs across our networks based on different lengths, assuming that Cadent performs all of the required work. This is summarised in the figure below. Generally, the cost will be multiplied by a factor of two to four. To give one example a quote for a new connection in Birmingham where the customer has five meters private land and Cadent is performing all of the required work would cost £922 today. In RIIO-3, without the DLCA, this would cost £2,485.

⁹ Other connections are funded through the Fuel Poor Network Extension Scheme.

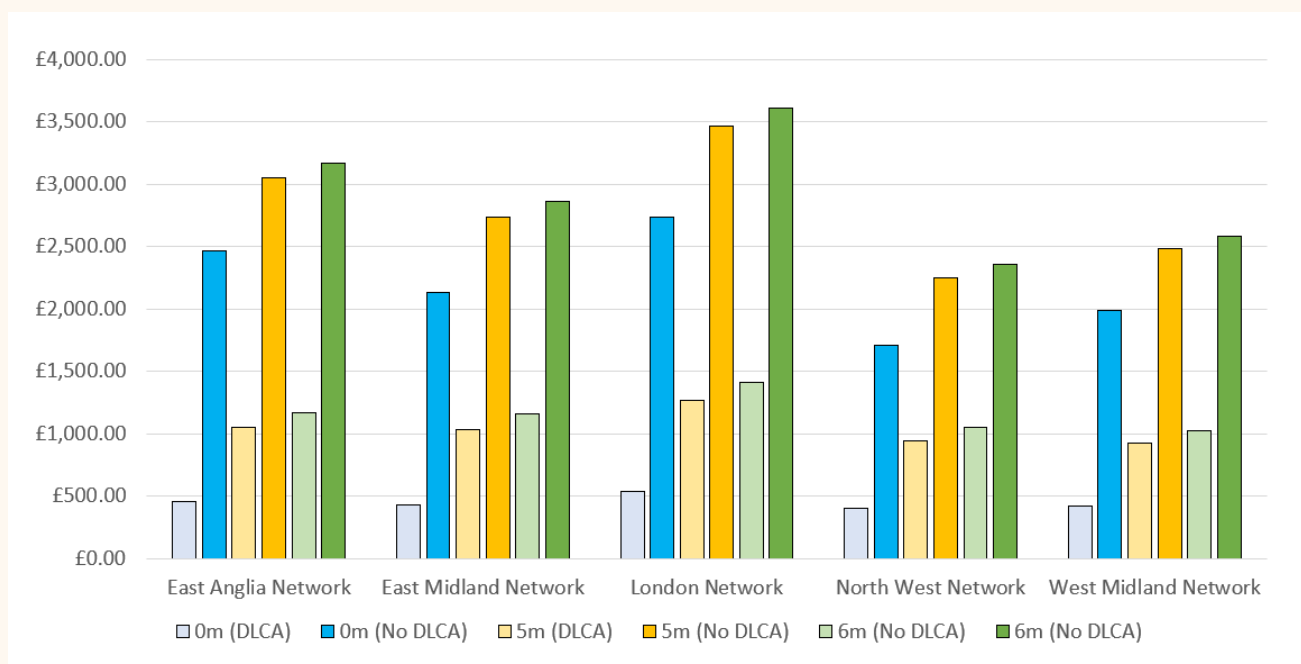


Figure GDQ45.1: Comparison of standard domestic connection costs for different length of private land with and without DLCA (April – December 2023 data)

Note: these estimates are “worst case” scenarios as they assume that Cadent performs all of the required work. In practice certain tasks can be performed by the customer (e.g., excavation on their land).

This cost increase will largely impact domestic customers. While we anticipate a decline in our connections in RIIO-GD3, we still expect to complete between five to ten thousand connections per year. The majority of these connections will be paid for by domestic customers. The graph below shows that 65% and 37% of connections requests, for existing housing and new housing respectively, are from domestic customers.

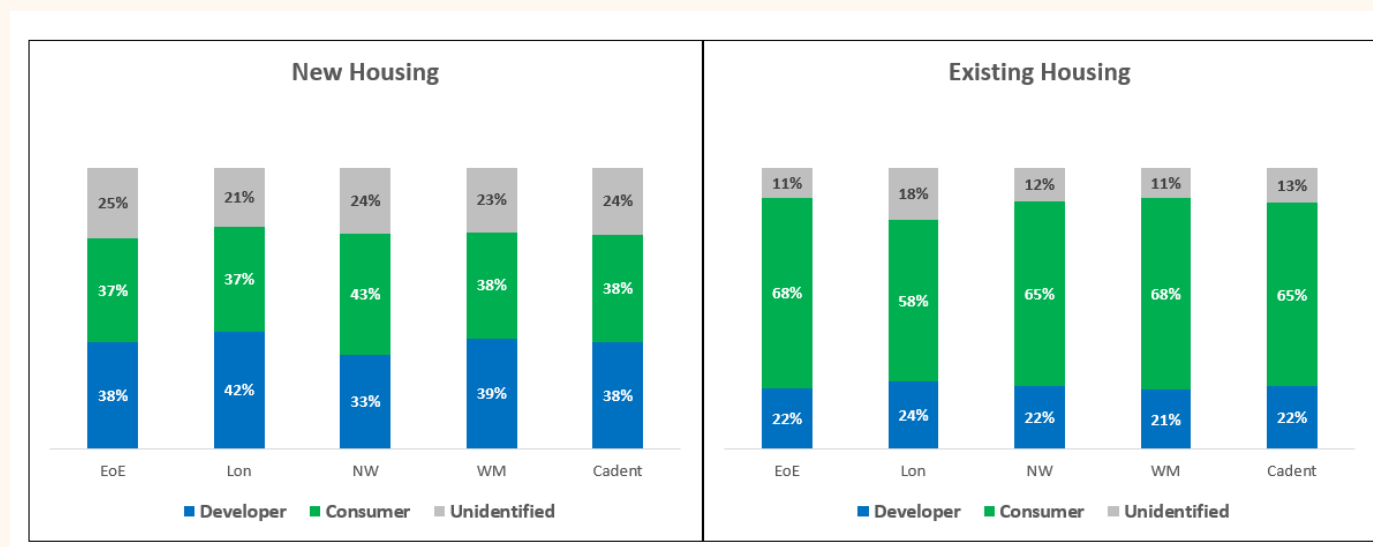


Figure GDQ45.2: Breakdown of connections per customer type in RIIO-GD2

Note: unidentified are companies which have not met the criteria to be classified as developer or consumers.

We already expect our connection volumes to be 64% lower in RIIO-GD2 than in RIIO-GD1. The significance of this price increase can only encourage a further decline in connection volumes.

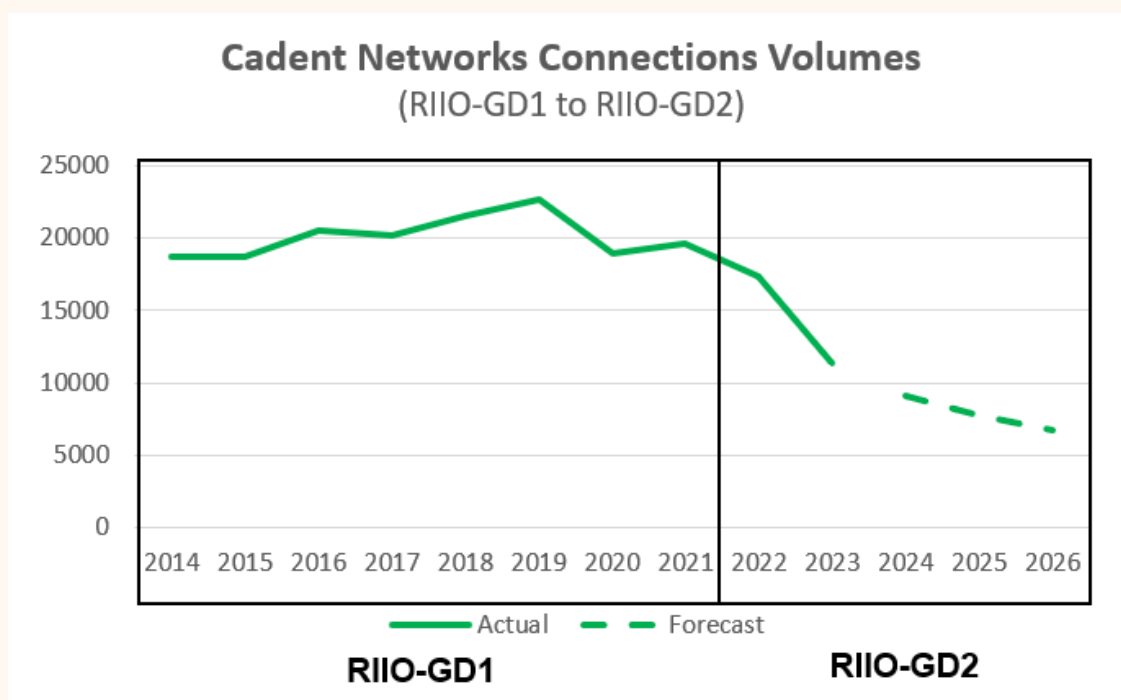


Figure GDQ45.3: Current and forecast connection volumes

Therefore, amendments to the regulatory framework may be necessary to protect vulnerable consumers and to ensure the standards GDNs are held to remain relevant:

- **The VCMA allowance should enable customers in fuel poverty to access financial support to fund a gas connection.** As explained above, domestic customers will be most impacted by the removal of the DCLA and the concomitant rise in connection costs. It is therefore essential to ensure vulnerable customers who need to connect to the gas network receive appropriate support. As detailed in our response to GDQ31, we believe that the scope and amount of the VCMA allowance should enable customers to access support for funding a gas connection;
- **The decline in connections could warrant a revision of certain standards and mechanisms in the regulatory regime.** There is a risk that low connection volumes do not enable us to derive statistically robust results. For examples:
 - As explained in our response to GDQ37, the Overall Standards of Service (OSOS) set out in Standard Special Condition D10 of the Gas Transporter licence should be removed due to connection volumes being too low and the risk of companies facing enforcement action for failing to deliver the standards in a very small number of instances; and
 - As explained in our response to GDQ35, the connections element of the customer satisfaction incentive could be removed for RIIO-GD3, or during RIIO-GD3 if connection volumes fall below a defined threshold. This is to mitigate the risk that the low connection volumes do not allow us to get statistically significant results. We already have to survey all our customers on current connection level to obtain statistically significant results to inform the customer satisfaction score.

GDQ46. What are your views on our proposal to remove the domestic connections volume driver? If you think it should be retained, what changes do you recommend for its design?

Given the proposed removal of the DLCA, we agree that the domestic connections volume driver can be removed. If the DLCA is removed there will be no domestic connections costs for GDNs to recover through transportation revenue.

GDQ47. What are your views on our proposal to remove the smart metering rollout costs re-opener in RIIO-GD3?

We agree with the removal of the smart metering rollout costs re-opener.

However, the smart meter rollout is currently less than 60% complete. As such, there is a likelihood that the programme of work will continue into the RIIO-GD3 period and GDNs will continue to incur intervention costs associated with the rollout.

For RIIO-GD2, GDNs were provided with a limited allowance for managing these network interventions associated with the smart metering rollout and this will need to be retained for the rest of the rollout period.

We will work with the industry to understand the likely timelines for completion. We will also assess the volume of interventions to include in our RIIO-GD3 base plan based on a range of factors including installer market maturity and nature of installs remaining.

GDQ48. Should personalising welfare services continue to be supported under RIIO-3 and, if so, how should it be funded?

The personalised welfare PCD has allowed Cadent to develop an innovative process and application that supports our engineers to determine the most appropriate welfare products and services to provide to customers who find themselves in a potentially vulnerable situation as a result of being temporarily isolated from their gas supply. The removal of a gas supply to a home can lead to one of the most vulnerable situations people can find themselves in – without the means to cook, heat their homes or access hot water. This can be particularly problematic in longer outages, in the winter, or for those most at risk from the situation (e.g. medically dependent, elderly or those with young children).

We have successfully ramped up the provision of personalised welfare over the first 2-3 years of the price control period and are now supporting thousands of households each month in this way. Whilst the uptake (in terms of customer numbers) is similar to that we expected when we developed our proposals for RIIO-GD2, the type of products and services that customers have been keen to access have differed. For example, food vouchers have proved very popular, whereas alternative (usually oil-filled or electric) heating sources have been less popular, especially as customers are concerned about the cost of running them.

We therefore believe that we have clearly demonstrated the need for this service to be offered to customers all over the country and have a ready-made process for others to follow, should they wish to do so.

In terms of how this is funded, we support Ofgem's preferred option to fund this as a specific project under the VCMA. However, as explained in our response to Question 30, we believe that the VCMA value must be increased from the current proposed level to include additional allowance for the provision of personalised welfare. Without increasing the VCMA to accommodate this additional service, the real impact will be a reduction in the VCMA for alternative projects, effectively reducing the level of financial support provided to GDNs to support an ever-growing number of customers living in vulnerable situations.

GDQ49. What are your views on our proposal to remove Cadent's bespoke High-rise building plans ODI-R from RIIO-GD3?

We agree with the removal of the High-rise building plans ODI-R. As noted by Ofgem, we have successfully surpassed our year two targets across all our networks, and all HRB plans will be in place by the end of RIIO-GD2. We also agree that the creation of high-rise building plans is now part of our BAU processes, where we will need to review/maintain existing plans and to only create them for new buildings.

It is important to note that the allowance provided in RIIO-GD2 did not solely relate to the creation of HRB plans. It also funded the teams to manage the stakeholder relationships associated with providing good service for MOB customers. These costs will remain in RIIO-GD3 and will be included as part of our baseline Business Plan. As set out in our response to GDQ55 below, we also believe these costs should not be included in comparative benchmarking for cost assessment and be separately assessed similar to other MOB-related expenditure (as at previous price controls).

Cost of service

Key Message:

With affordability being a key consideration for the setting of the RIIO-GD3 price control, we welcome the principles underpinning Ofgem's approach to undertake a robust cost assessment process and support building on the learnings from RIIO-GD2 and the conclusions reached by the CMA to do so. We have undertaken a substantial amount of work on cost assessment methodologies to help inform the SSMD and we will continue sharing this to support Ofgem in developing the RIIO-GD3 approach.

Below we have set out our views on the criteria for how to determine what assessment approach to use for particular cost types (i.e. what is comparatively assessed via regression, and not), building on RIIO-GD2 and, where possible, identifying proposed approaches for specific categories of expenditure. Regardless of the criteria set to determine how costs are assessed, however, what is most important is that the criteria to be applied consistently across GDNs to avoid any potential biases from removing costs from those to be regressed for some when they are legitimately still included for others.

We have identified several improvements that are important Ofgem consider for its framework for adjusting costs to be assessed via regression analysis for regional and company-specific factors. We have also provided a roadmap for how Ofgem can approach these factors in a different, and complementary way to its pre modelling adjustments. Specifically, we believe a totex model using so-called 'density' variables could helpfully provide an alternative view of regional and company-specific cost impacts that the current framework does not sufficiently capture on its own. This together with fuller recognition of required pre-modelling adjustments could ensure a more robust controlling of these exogenous cost drivers in the resulting regression assessment.

We also support proposals to consider the use of more than one totex regression model for setting allowances and have identified a number of areas of weakness in the current set of cost drivers and potential improvements that could be made. These include a more robust approach to combining cost drivers should Ofgem persist with using a CSV in its models. The use of several models to set allowances, however, also comes with further considerations and we believe that it is essential Ofgem establish a clear principles-based framework early for how it would combine models, should it ultimately use several to set allowances.

To ensure a robust cost assessment at RIIO-GD3, ultimately the testing, iteration and assessment of approaches must be undertaken collaboratively with GDNs throughout the setting of the control. We support the transparent approach taken by Ofgem thus far through CAWGs by sharing models and assumptions with GDNs to ensure robustness. We would encourage Ofgem to consult with GDNs post business plan submissions on more detailed and specific cost assessment topics (including potential models) before Draft Determinations. This would then allow further time for model assurance and refinement before Draft Determinations and a more detailed consideration of issues than is feasible via the SSMC.

GDQ50. What are your views on the potential advantages of using multiple totex regression models in RIIO-GD3?

In assessing GDNs' expenditure, it is useful to consider multiple 'levels of aggregation' (totex, 'middle-up', 'bottom-up') so a rich-picture of cost efficiency can be gained and outcomes cross-checked for their robustness. At RIIO-GD1 and RIIO-GD2 totex level, 'middle-up' level and 'bottom-up' levels of aggregation have been considered (i.e. at draft determination) and we believe it is right to re-assess the appropriate level of aggregation again for RIIO-GD3. However, we continue to believe that it is likely that a totex level will remain most robust for comparative efficiency analysis.

Levels of aggregation for RIIO-GD3 cost models

Key advantages totex level benchmarking offers over and above more disaggregated benchmarking are that:

- if properly specified, it can **control for the ability of GDNs to make cost trade-offs** between different types of activity and avoid inaccurate cost benchmarking at a disaggregated level, where **differences in capitalisation policy and/or cost allocation** between ownership groups have the potential to make a GDN appear efficient in one cost category when some GDNs make legitimate decisions not to allocate to that category than others. Whilst we note the use of more granular assessment in RIIO-ED2 by Ofgem, it is important to note that due to the smaller number of networks and ownership groups in gas distribution any changes in capitalisation/cost allocation over time, as we have seen in RIIO-GD2, may have a more pronounced impact on benchmarking results.
- it avoids the potential for any **perverse incentives** to shift costs between cost buckets for companies depending on their cost assessment treatment – particularly given the lack of more disaggregated models for certain categories of spend.
- partly as a result of the other identified issues above, with more disaggregated modelling, **middle-up and bottom-up models have previously performed worse statistically** than totex approaches. Specifically, with:
 - Statistically insignificant coefficients on cost drivers within bottom-up and middle-up models;
 - Lower adjusted R-squared values compared to totex models, indicating lower explanatory power;
 - Unintuitive economic relationships between variables, as shown by the sign (negative or positive) of the coefficient on the cost driver; and/or
 - Failure of other key statistical tests such as the RESET test, which indicates that the functional form of the regression is mis-specified.

This said, more disaggregated cost models are useful where they can be robustly defined as they provide greater insight to the drivers of costs for a particular activity. Hence, they may be able to inform the choice of driver to include in totex models or how any drivers are weighted in composite drivers, to explain particular categories of cost, based on coefficients estimated in more disaggregated modelling. Furthermore, if sufficiently robust, they can be used to aid allowance disaggregation (e.g., by splitting totex allowances and/or separating fixed and variable costs for the setting of volume drivers/PCD parameters).

Ultimately, the level of aggregation used for regressions at RIIO-GD3 needs to be determined by the statistical quality of models estimated. Evidence from past price controls suggests totex models will continue to be preferable and, unless the robustness of more disaggregated models improves, they

should not be used to set allowances. If they are used to set allowances, given their weaker statistical performance and risk of providing misleading inference on companies' relative efficiency, a reduction would be required to the cost efficiency benchmark (e.g. from 85th percentile to 75th or median).

Use of multiple models for RIIO-GD3

Whilst totex may eventually be determined to be the preferable level to comparatively assess costs between GDNs, we would urge Ofgem to consider multiple totex models to ensure a rich-picture of GDN relative efficiency at RIIO-GD3. At RIIO-GD2 Ofgem used a single totex regression with one cost driver – the Composite Scale Driver (CSV) – having made pre-modelling normalisations for exclusions for separate assessment and regional/company-specific factors. This marked a change from the use of multiple models at RIIO-GD1, RIIO-ED1 and water price controls. It is also important to note that Ofgem reverted to the use of multiple models also when setting the subsequent RIIO-ED2 price control.

We continue to believe that it is unlikely that one model with a single composite cost driver will capture all exogenous drivers of GDN costs sufficiently for the resulting efficiency challenge to be accurate. Using one model places substantial reliance on the statistical performance of that model, creating the potential for wide-spread challenge of Ofgem's cost assessment (potentially via appeal, as we saw at RIIO-GD2). It also makes results very sensitive to methodological changes throughout the development and refinement of models, e.g., with the inclusion/exclusion of specific categories materially impacting benchmark results and rankings (again, as we saw at RIIO-GD2).

We therefore support Ofgem's proposed approach of considering the use of several totex models to set allowances for RIIO-GD3 as this would allow a fuller picture of GDN cost performance to be understood and reduce the risks associated with the use of a single model, whilst potentially avoiding some pitfalls should disaggregated modelling continue to be unreliable.

To utilise multiple models however, it is important Ofgem makes clear upfront the principles it will adopt when combining models to set allowances. Our view on the principles for combining models (be they totex or a mixture of levels of aggregation) are:

- Generally, if all models perform well statistically (statistically significant coefficients on cost drivers, high explanatory power, intuitive economic relationships between variables, and passing of key statistical tests), the best approach should be to take a simple average of the results of the individual models:
 - For combining totex models, this can simply be done at the final stage of the modelling (i.e. taking the average of the modelled costs emerging from each model, before setting the efficiency target for the industry).
 - If multiple models are combined to set allowances, and these models are not all totex models, the efficiency target should be set after the aggregation of results at the totex level (e.g., for a set of bottom-up and/or middle-up models) to avoid 'partial benchmarking'. If the benchmark (e.g., 75th percentile) is calculated for each individual model (i.e. cost area within bottom-up modelling) and then aggregated, it may result in a benchmark that is lower than any one network's costs, which is unreasonable as it does not account for different business strategies, capitalisation policies and cost allocation choices across companies. Therefore, models for different cost areas should first be aggregated to the totex level, with the benchmark calculated afterwards.

Setting a single benchmark for combined costs ensures that differences in capitalisation and cost allocation choices between companies do not influence the target. At RIIO-ED2 Draft Determinations, Ofgem set efficiency targets separately for its totex and disaggregated modelling stream (i.e. partial benchmarking). The resulting overall efficiency

target implied no DNO was efficient at the time of benchmarking. DNOs argued that this target was unreasonably stretching and arbitrary, which prompted Ofgem to revise its position at Final Determinations to set a single efficiency target after combining totex and disaggregated analyses.¹⁰

- If all models do not perform equally as well, but for other reasons it is deemed useful to utilise a range of models, it is important consultation with GDNs is undertaken to consider alternative approaches to combining model results. If this were the case, alternatives that could be assessed include:
 - placing more weight on better statistically performing models;
 - setting a less stretching efficiency benchmark to recognise the use of less reliable models; or
 - taking the maximum of modelled costs for each GDN between the models being considered before adjusting all GDNs' allowances for the target (e.g. upper quartile) level of efficiency (should some of the models considered be appropriate for setting allowances for some GDNs, but not others, and the underlying cause of this discrepancy be robustly evidenced)
- Lastly, if multiple models are used to set allowances, and one of the models included accounts for some regional, or company-specific factors within a model (such as a density model), this does not obviate the need for regional factors in the other models used (e.g., via pre-modelling adjustments). For example, at PR19, Ofwat's benchmarking analysis used density models combined with models which included other regional cost drivers. Ofwat's rationale for this approach is that density does not reflect all network characteristics that vary at the regional level, such as complexity and topography of the network.¹¹ If some models control for these additional factors, while others do not, the models that do not control for them in the model would still require pre-modelling adjustments to achieve a like-for-like comparison between GDNs' costs. For more detail on the potential use of density modelling alongside/in place of regional factors in some cost models see our response to GDQ 57.

GDQ51. What alternative cost drivers and model specifications would you propose for early testing?

Following the setting of the RIIO-GD2 framework, and the subsequent CMA appeal, we have undertaken significant work to review the GD2 totex regression approach to assess areas where improvement could be made moving into RIIO-GD3. To do this we have sought to identify areas of potential weakness in the modelling suite and then initiate work to consider improvements. Four broad areas we have identified from this review where improvements could be made are:

1. **Consistency of exclusions from totex for technical and/or non-regression assessment** – inconsistent application of principles for exclusion will artificially over and understate the efficiency of certain networks and at GD2 materially impacted benchmarking outcomes throughout the process. We provide more detail on our views for how greater consistency could be brought to cost exclusions at RIIO-GD3 in our responses to GDQs 55.
2. **Insufficient recognition of regional and company-specific factors** – in our CMA appeal to RIIO-GD2 we set out evidence which suggested that Ofgem had not sufficiently recognised exogenous cost drivers in its totex model to capture regional and company-specific factors, particularly to reflect the unique cost implications of working in London. For RIIO-GD3 we are developing new evidence to support our position and evidence our own company-specific

¹⁰ Ofgem (2022), "RIIO-ED2 Final Determinations: Core Methodology", para 7.592.

¹¹ Ofwat (2019), "PR19 Supplementary technical appendix: Econometric approach", sections 3.4 and 4.4

factors. We have also identified several improvements to the regional factor adjustments Ofgem makes itself for RIIO-GD3. Further detail on both of these is set out in our responses to GDQs 57 and 58.

3. **The formulation of Ofgem's CSV** – in its RIIO-GD2 totex model, normalised costs are modelled by a single cost driver which varies over time and between GDNs (alongside two linear time trends). The single cost driver is the CSV – a weighted average of drivers for different areas of the GDN cost base with weights determined by average normalised spend proportions of totex. The CSV aims to capture variation in several drivers of cost, without losing many degrees of freedom due to a relatively small dataset. We believe this approach to weighting drivers in the CSV introduces bias into the model which impact relative efficiency scores. Below we set out an alternative potential approach for constructing the CSV no matter what drivers are used RIIO-GD3 to overcome these biases.
4. **Specific drivers used within the CSV variable** – based on the performance of the RIIO-GD2 model and changes anticipated for the RIIO-GD3 period we think it is important to review each constituent driver of the RIIO-GD2 model. Specific areas of priority and suggestions we have to make at this stage are also set out below.

Across all of these areas we believe potential improvements should be considered throughout the GD3 process, particularly as the full dataset will only be available post business plan submissions. To support the testing, iteration and robustness of modelling throughout we would encourage collaborative work and discussion via Cost Assessment Working Groups (CAWGs) and propose that Ofgem consider use of a more detailed and specific cost assessment topics (including potential models) before Draft Determinations. This latter step specifically would then allow further time for model assurance and refinement before Draft Determinations. We found at RIIO-GD2 the lack of any information before Draft Determinations on modelling led to a large amount of late rework to ensure modelling was robust for Final Determinations, with some areas not remedied – which in part led to appeal of the price control to the CMA.

A potential alternative way to construct the CSV

Whilst we understand the rationale for use of a CSV by Ofgem in its totex model, it embeds a number of assumptions on the relationships between costs and drivers, and how these vary across GDNs, in particular the use of industry average driver weightings and the implicit assumption of a constant elasticity between each of the drivers and totex¹². Both of these methodological choices introduce bias into the efficiency assessment. Ofgem and its own academic advisor conducted analysis on alternatives to the current CSV at RIIO-GD2 recognising these assumptions, but ultimately could not find an approach which demonstrably improved on it. However, their work did show that the current approach “*seems to be rejected based on statistical testing*” and it would be useful to develop and test alternatives.¹³ We have sought to remedy the identified biases by making three changes to Ofgem's approach to calculating the CSV for consideration at RIIO-GD3.

Firstly, the current approach uses industry average expenditure to weight drivers. This does not account for the fact that GDNs may have different expenditure composition to the average for reasons

¹² By weighting the CSV by industry average expenditure shares (or expenditure shares more broadly), this does not account for different ratios of fixed and variable costs for different cost categories. For example, the elasticity (i.e. the slope coefficient in the regression) could be close to zero for a disaggregated cost category, suggesting costs are largely invariant to changes in the driver, where as in other cost categories the elasticity could be higher.

¹³ Smith, A. (2020) “*Note for Ofgem on the computation of CSV weights*”, University of Leeds, January 2020, P. 7

beyond their control. This introduces a bias, making the results of any benchmarking less accurate for GDNs with an expenditure composition that is furthest away from the industry average.

To show this, we have conducted a simulation exercise using an illustrative dataset comprising 50 hypothetical GDNs:

- For this exercise, we construct an artificial dataset in which all GDNs are – by assumption – equally efficient.
- GDNs have three cost areas, with expenditure levels between £100 and £200 in each area, summing to equal the GDN's totex. Across the industry, each cost area has approximately equal "weight", so on average the GDNs spend approximately £150 in each area.

$$Totex_i = Expenditure_{1,i} + Expenditure_{2,i} + Expenditure_{3,i}$$

- Each cost area has one driver that perfectly explains the cost, i.e. we set the driver equal to the cost value, so the underlying cost function for the GDNs (denoted i) is as follows, with no residual component that could be interpreted as capturing differences in GDNs' efficiency:

$$Totex_i = 1 \times Driver\ 1_i + 1 \times Driver\ 2_i + 1 \times Driver\ 3_i$$

- GDNs therefore differ only in terms of their (i) total totex; and (ii) spend composition across the three cost areas.
- We then run a benchmarking model with industry average CSV weights, similar to Ofgem's approach, using the following functional form, in which b is the coefficient on the CSV, and the weights (w_j) on the three categories (denoted j , from 1 to 3) are based on industry average expenditure shares:

$$\begin{aligned} Totex_i &= b \times CSV_i + error \\ CSV_i &= S_j(w_j \times Driver_{j,i}) \\ w_j &= S_i(Expenditure_{j,i}) / S_i(Totex_i) \end{aligned}$$

In this model form, the GDNs in our hypothetical dataset appear to differ in terms of efficiency, despite the fact we have assumed by construction that all GDNs are equally efficient.

This problem can be resolved by changing the way the CSV is constructed, by weighting drivers based on each GDN's own expenditure shares, as follows:

$$\begin{aligned} Totex_i &= g \times CSV_i + error \\ CSV_i &= S_j(w_{j,i} \times Driver_{j,i}) \\ w_{j,i} &= Expenditure_{j,i} / Totex_i \end{aligned}$$

The degree of inefficiency identified in the first model (i.e. with industry weights) affects companies whose cost composition differs most from the industry average. To illustrate this, the figure below compares the predicted values from the two methods (the vertical axis). It shows that some companies have predicted values for their total totex higher than their true (efficient) costs (in the top left of the chart), and some have modelled totex below their true (efficient) totex (in the bottom right).

The figure also shows a strong correlation between these differences in predicted values and the value on the horizontal axis, representing how far each GDN's cost share is from the industry average

expenditure shares.¹⁴ This negative correlation shows that those GDNs with a cost composition closer to the industry average (i.e. those in the top left quadrant of the chart) have a systematically higher modelled totex under the industry approach than the company-specific approach (and vice versa). Hence, companies with an expenditure share further from the industry average will tend to be disadvantaged by the GD2 approach, which assumes common shares across of activity across cost areas for all GDNs.

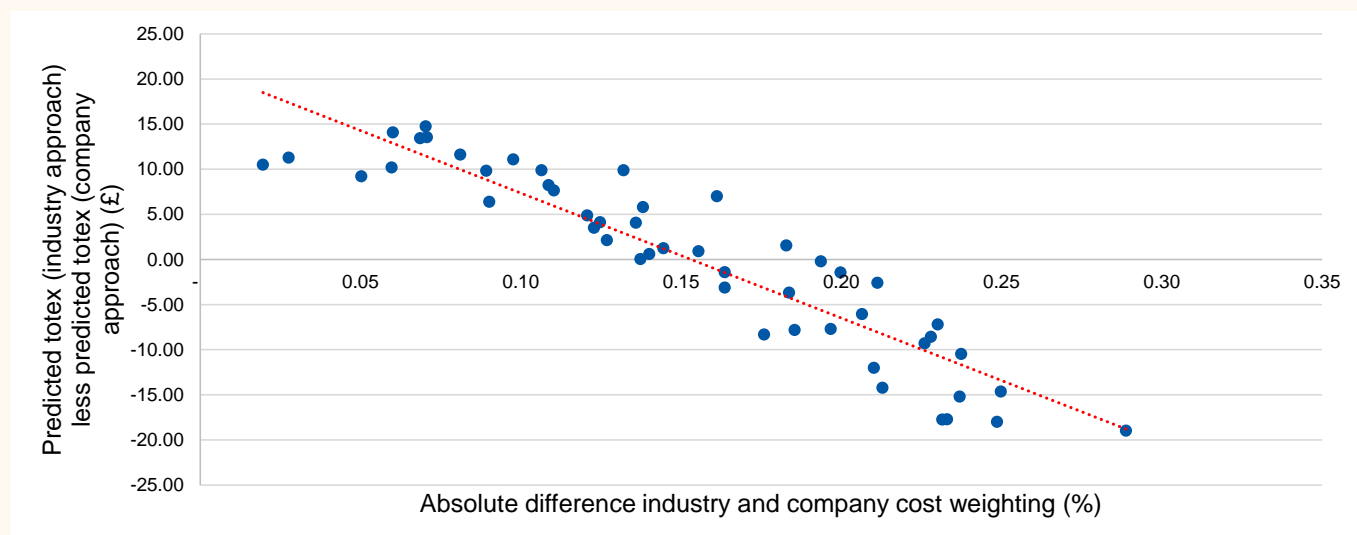


Figure GDQ51.1: Results of CSV simulation – industry vs company-specific CSV weights

We therefore believe that Ofgem should seek to explore alternatives to weighting CSV elements using industry average spend proportions. We suggest adopting company-specific weights.

Secondly, should the use of GDN-specific weights be adopted, we also suggest Ofgem standardise the unit of measurement for each of the cost drivers in the CSV. Units of measurement of each of the cost drivers are set out in Table GDQ51.1 below. As shown these vary between each driver. In the CSV, where drivers vary in their units and weights vary by company depending on their spend proportions, this systematically benefits companies with a relatively higher proportion of costs in ‘high unit’ drivers such as the Emergency CSV and MEAV.

Driver	Unit of measurement	Broad range of figures
Emergency CSV	No.	100,000's – 1,000,000's
Maintenance MEAV	£	1,000's
Total external condition report	No.	10,000's
Repex synthetic cost	£	100's
Mains reinforcement synthetic cost	£ million	<10
Connections synthetic cost	£	<10 - 10's
MEAV	£	10,000's

Table GDQ51.1: Units of measurement for drivers in Ofgem's CSV

We have used a similar simulation to the one described above to demonstrate the impact of the CSV containing variables of different units.

¹⁴ The variable on the horizontal axis is calculated as the absolute difference between the industry average weight and the company specific weight (% of totex). Therefore, it is a measure of how different the GDN is from the industry average.

- The simulation is exactly the same as described above, i.e. with 50 GDNs that are constructed to be equally efficient, but now with only two drivers, one of which we scale by a factor of 100,000 (the 'high unit' driver, which we then refer to as "*Driver 2b_i*"), while we do not scale the other driver (the 'low unit' driver)¹⁵. Hence, the cost function is now as follows:

$$\begin{aligned} \text{Totex}_i &= \text{Expenditure}_{1,i} + \text{Expenditure}_{2,i} \\ \text{Driver } 2b_i &= \text{Driver } 2_i \times 100,000 \\ \therefore \text{Totex}_i &= 1 \times \text{Driver } 1_i + (\text{Driver } 2b_i / 100,000) \end{aligned}$$

Despite *Driver 2b* being a high unit driver, each cost area still has one driver that perfectly explains the cost and hence the GDNs are still all equally efficient, as in the previous simulation. Hence, the final identity above still holds.

- We construct the dataset, so that GDNs 1-25 all have 55% of their costs in the area with the low unit driver (category 1), and 45% of their costs in the area with the high unit driver (category 2). They all have different totex values. When constructing the dataset, we set GDNs 26-50 to pair with GDNs 1-25, such that GDN 26 has the same totex value as GDN 1, but with 45% of its cost in the low unit area (category 1), and 55% in the high unit area (category 2), so it has the same absolute difference from the industry average expenditure share. Hence, pairs of GDNs only differ in the share of expenditure in the high/low unit categories.
- We then run the same regression with company-specific weights as above. The figure below shows that, with company-specific weights, the GDNs with higher expenditure in expenditure category 2 (the high unit area) have higher modelled totex than GDNs in the reverse position, i.e. higher expenditure in expenditure category 1.

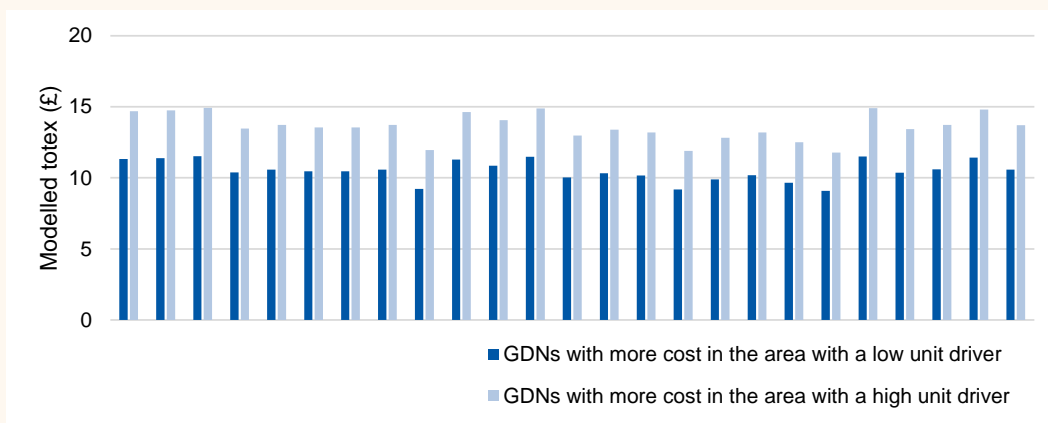


Figure GDQ51.2: Results of CSV simulation – standardisation of units

- However, for other combinations (both the regression with company-specific weights and standardised units, and regressions with industry average weights), all GDNs appear equally efficient. This result demonstrates the need to use standardised units if using company-specific weights.

Given the clear benefits of using company-specific weights to address the fact that some GDNs incur higher costs in some areas than others for reasons beyond their control (as outlined above), we consider the standardisation of units to be an important further improvement to Ofgem's modelling approach.

¹⁵ For simplicity, the second simulation model only contains two cost drivers, a high-unit driver, and a low-unit driver.

Finally, Ofgem's approach, even with the first two amendments suggested above, still assumes a constant elasticity between costs and the driver for each category of GDNs' activity in the CSV. Specifically, Ofgem's GD2 formulation (reproduced as follows) assumes that an increase in the CSV would cause a unit increase in totex by b_j , irrespective of which category of activity causes the increase. This assumption is unlikely to be realistic, for example because categories of expenditure differ in how sensitive they are to changes in the underlying drivers included in the CSV to explain them.

$$\ln(Totex)_i = a + b \times \ln(CSV)_i + error$$

The variance in elasticities across the bottom-up models at RIIO-GD1 (and similar models estimated as part of the model testing and development work at GD2) demonstrate this, i.e. by observing different values of b_j across disaggregated regressions for different cost categories (j) in the following form:

$$\ln(Expenditure)_{i,j} = a + b_j \times \ln(Driver)_{i,j} + error$$

Analysis undertaken by Ofgem's academic advisor at RIIO-GD2 showed that it is not feasible to address this problem by including elements of the CSV as separate drivers, as this led to counterintuitive cost driver signs and statistical insignificance for some drivers. This likely the result of multicollinearity and low degrees of freedom in the modelling when this amount of drivers are used in an unrestricted fashion, estimating each b_j separately as follows in a dataset of i GDNs:¹⁶

$$\ln(Totex)_i = a + S_i(b_j \times Driver_{i,j}) + error$$

An alternative way to allow elasticities to vary is to estimate them using bottom-up cost models and 'insert' them in the totex model. This also helps capture the information bottom-up models have, whilst relying on the generally better statistical robustness of totex models (see our response to GDQ50). This can be achieved by:

1. Running bottom-up models for each cost area to obtain the coefficients on each individual cost driver (b_j), as follows:

$$\ln(Expenditure)_{i,j} = a + b_j \times \ln(Driver)_{i,j} + error$$

2. Multiplying the CSV weights by the coefficient for each cost driver (b_j) to construct the CSV:

If using company-specific weights (as recommended above):

$$CSV_i = S_j(b_j \times w_{j,i} \times Driver_{j,i})$$

$$w_{j,i} = Expenditure_{j,i} / Totex_i$$

If using industry weights (as at GD2):

$$CSV_i = S_j(b_j \times w_j \times Driver_{j,i})$$

$$w_j = S_i(Expenditure_{j,i}) / S_i(Totex_i)$$

¹⁶ Smith, A. (2020) "Note for Ofgem on the computation of CSV weights", University of Leeds, January 2020, P. 5

3. Running the totex model with this amended CSV explanatory variable, as derived in step 2.

We have applied all three of our suggested improvements to Ofgem's RIIO-GD2 model (post-CMA remedies) using the dataset available at the time of the GD2 decision. These suggested model changes improve the statistical performance of the model (see Table GDQ51.2 below), as measured by the adjusted R squared. The model also passes the RESET test of model specification (for omitted non-linearities), which Ofgem's GD2 model did not pass after application of the CMA remedies, whilst also still fulfilling normality requirements.

Parameter/test	GD2 model re-creation	GD2 model with standardised drivers, and company-specific and elasticity weighted CSV
Totex CSV Coefficient	0.812 {0.0000004}	0.847 {0.0000001}
Constant Coefficient	-0.217 {0.5243609}	5.535 {0.0000000}
Adj R-squared	0.927	0.934
RESET	0.016	0.153
	FAIL	PASS
Normality test p-value	0.587	0.625

Table GDQ51.2: Results of applying our proposed amended CSV

Specific areas of priority for development of cost drivers within the CSV

We also believe each of the constituent drivers within the CSV should be reviewed and alternatives considered for RIIO-GD3. Reviewing these drivers may not ultimately lead to change, but is important to undertake a review to understand whether alternatives can better explain particular cost categories and have better statistical performance than drivers used in previous controls, or whether testing against alternatives validates keeping drivers used at RIIO-GD2. For example, the approach to calculating the emergency cost driver used within Ofgem's RIIO-GD2 models was determined as part of setting RIIO-GD1 (as a CSV with 80% weight on customers and 20% on repair reports). As such it is important to validate whether the assumptions belying this weighting are still valid or whether other drivers (e.g., the total number of Public Reported Escapes) could allow for modelling improvements.

We have started a review internally across cost drivers and set out below two areas we believe should be looked at as a priority for RIIO-GD3.

Repex

Repex comprises the largest single activity for GDNs within totex, and accounted for 38% of costs at the industry level within Ofgem's totex regression at RIIO-GD2. As such, it is important that the repex cost driver is reviewed for RIIO-GD3 to ensure it is able to robustly model exogenous variation in costs between GDNs. This is even more imperative for the upcoming price control. As we move into RIIO-GD3 we will see the tail-end of the Iron Mains Replacement Programme (IMRRP) being largely completed. As the IMRRP reaches completion, we anticipate significant pressure on unit costs compared to previous controls. Pressure on unit costs is expected to come from several sources:

- **Commercial cost pressures** – finalisation of the programme means that there is little incentive on delivery partners to invest in tools or training to innovate or develop new systems and processes. Indeed, there is a real risk that resource availability will tighten during the period because it takes typically three years to train a main laying craftsman to a standard when they can work autonomously. Given this it will likely make the labour market tighten, increasing costs of recruitment and retention. In addition, the work to finalise the Tier 1 programme will need to be undertaken at a time where there is higher competition and market pressure on resources than in previous price control periods, with all GDNs finalising their mains replacement programmes and large investment programmes ongoing in other sectors (e.g., water, fibre broadband amongst others) increasing demand and the price of labour, and therefore creating upward cost pressure on the level of efficient costs.
- **Increasing complexity of work** – during RIIO-GD3 we plan to undertake more work where network-specific factors make work more complex, and thus increase the efficient cost of delivering this workload. For example, we will incur additional costs for the design and planning stages compared to previous repex activity, as well as additional cost as a result of complications related to access and other requirements (e.g., we expect a greater volume of work in the vicinity of national rail crossings and schools);
- **Greater streetworks related costs** – during RIIO-GD3 work will be required to finalise our Tier 1 programme in areas where access is difficult and/or streetworks permit significantly increases costs of delivery. We recognise, however, that at RIIO-GD2 these costs were assessed via non-regression assessment which we would support continuing as these and other factors could be taken into account in determining any allowance (see our response to GDQ 56 for our thoughts on streetworks assessment)

We understand these factors are also expected to be felt across the wider industry, with other GDNs raising the need to consider how to evolve the repex cost driver for RIIO-GD3.

At RIIO-GD2, Ofgem used a 'synthetic cost driver' to model repex. This was calculated as the product of workload and assumed unit costs (with workload defined at a highly disaggregated level), summed across all individual repex activities. The assumed unit cost is uniform across GDNs and based on an industry average determined by historical and forecast data submitted by GDNs, having applied several criteria to remove certain observations from inputs received from GDNs in their business plans. If these criteria were not met for a particular category of repex, Ofgem first considered a higher level of activity aggregation, and then if the criteria could still not met, Ofgem used a 'scaling factor' applied to the 'closest activity' for which a unit cost was available to generate one.¹⁷ This scaling factor

¹⁷ Criteria set out in Ofgem (2020) "RIIO-GD2: Step-by-Step Guide to Cost Assessment", Para. 1.43 – 1.49 include:

- Minimum number of observations: data provided must be available for a minimum of two historical reporting years and for a minimum of two GDNs
- Outlier test: unit costs provided must be within 100% of the industry average unit cost over the same period
- Maximum unit cost variability between GDNs: to check whether individual GDN unit costs are within 40% of the industry average over the same period
- Maximum unit cost variability over time: to check whether unit costs calculated in each year are within 40% of the average unit cost over the considered period.

Ofgem also considered qualitative requirements including data quality and comparability, routineness of work and materiality in cleansing data for averaging.

is based on the assumption that the percentage difference between units costs of different activities was the same as between the synthetic costs used in RIIO-GD1.

We think as a first step for modelling repex at RIIO-GD3, it is important that the methodology used to develop synthetic costs is reviewed to ensure the driver is as robust as possible and figures are updated with latest data from Business Plan Data Tables. For example, we believe it is important to work collaboratively between Ofgem and GDNs pre and post business plan submission to understand if current criteria – both quantitative and qualitative – applied to determine synthetic costs are appropriate and if the current level of disaggregation of unit costs across workload types is appropriate, or if either can be built on to improve the statistical performance of the cost driver in the model(s) used.

There is then a question about whether the driver could be improved on in other ways to capture cost pressures set out above. We have given some initial consideration as to whether the cost pressures we expect for repex at GD3 justify a change in the use of the synthetic cost driver. On the one hand, should the repex pressures be equally distributed across GDNs (with the same underlying causes), the synthetic cost driver will adjust to partially take account of these, to the extent the unit costs are based on GDNs' GD3 forecast data. Furthermore, as the totex benchmark is set based solely on forecast costs, should cost pressures be uniform across GDNs, the setting of the benchmark would also adjust, even if the synthetic driver is based on historical data that does not reflect emerging cost pressures. However, where cost pressures are GDN-specific, these would not be reflected in either the CSV itself, or the process of setting a cost benchmark based on GD3 forecast data after running the regression models.

At this stage, however, not knowing what particular works each network has to complete to finalise their programmes, we cannot know whether cost pressures are uniform and indeed there may be different drivers of cost increases across GDNs. Where some cost pressures are emerging for reasons beyond GDNs' control and have differing impacts across companies, it may be necessary to adjust for rising cost pressures in the construction of the CSV or via consideration of cost exclusions and technical or non-regression assessment for specific work categories – see our response to GDQ55). However, this must be done on a consistent basis over time and between GDNs.

Should driver development from that used today be warranted, areas for development of the cost driver could include:

- **Consideration of greater use of forecast costs** – whilst the synthetic driver will adjust partially as it uses historical and forecast unit costs it will not adjust completely should unit costs materially increase for RIIO-GD3. Therefore, Ofgem could consider greater use of forecast costs for setting synthetic unit costs by choosing an appropriate averaging period to calculate them. To assess whether a change in approach is necessary at GD3, Ofgem could perform statistical tests to assess whether there has been a statistically significant change in the level of GDNs' unit costs for certain types of activity.
- **Modelling new categories of repex work within the synthetic driver** – if there are new categories of repex to be undertaken at RIIO-GD3 and/or a greater prevalence of specific types of work which make historical unit costs in categories they fall into unrepresentative, Ofgem could consider introducing new categories of work into the synthetic workload variable (or again basing unit costs on forecasts).
- **Augmented/additional drivers** – Ofgem could also consider augmenting the current driver: using a different approach to generate synthetic unit costs (e.g. new rules/criteria for use of data) or including additional drivers to the synthetic cost if appropriate. For example, one to capture work complexity not related to tier, diameter band and material type (and not captured by the synthetic in its current form). However, the use of a revised methodology to develop synthetic costs would require careful consideration through future CAWGs, and the inclusion of any new drivers in the regression model should be justified with reference to clear economic and statistical criteria.

Areas currently modelled using Modern Equivalent Asset Value (MEAV) as a driver

At RIIO-GD2, 37% of costs at the industry level within Ofgem's totex regression were modelled by MEAV, with it largely being used to model the residual of costs in the cost base which did not have a bottom-up cost driver at RIIO-GD1.¹⁸ MEAV is intended to capture network scale and is calculated as a product of the population of set categories of assets on the network (e.g. mains, by diameter band, offtakes, risers etc) and modern equivalent replacement values on a per unit basis, summed across all asset types.¹⁹

Given the lack of any bottom-up modelling at RIIO-GD2 there was no indication of how MEAV performed as a cost driver for the constituent elements it was related to. Following the GD2 price control, due to the significant portion of costs modelled by MEAV we have undertaken analysis to seek to understand how the MEAV driver performs. Table GDQ51.3 presents regression results from running individual regressions of each category of expenditure explained by MEAV in the CSV, on MEAV using Ofgem's GD2 price control dataset.

As the table shows for all categories modelled by MEAV in the totex regression, MEAV is a poor driver of costs with low explanatory power and in several cases an insignificant coefficient on the cost driver.

Parameter/test	Work Management	Work Management (Ops Management)	Other Direct Activities (ODA)	Business Support	Training & Apprenticeships	Other Capex	Governors	LTS Pipelines, Storage & Entry	Transport & Plant
Constant coefficient	-3.805	-5.122	-6.080	-2.149	-6.603	-4.339	-14.750	-8.313	-3.558
MEAV Coefficient	0.749	0.835	0.792	0.574	0.807	0.734	1.626	1.084	0.527
Statistical significance at 5% level	YES	NO	YES	NO	YES	YES	NO	YES	NO
Adj. R Squared	0.428	0.324	0.247	0.278	0.431	0.231	0.334	0.388	0.051
RESET	PASS 0.089	PASS 0.062	PASS 0.173	PASS 0.065	PASS 0.266	PASS 0.097	PASS 0.168	PASS 0.628	PASS 0.148

Table GDQ51.3: Results of re-running Ofgem's RIIO-GD2 data for disaggregated MEAV categories

Based on this evidence we believe a further important consideration and area for development at RIIO-GD3 is consideration of whether elements of the cost base currently modelled by MEAV are able to be 'split out' and modelled by an alternative more robust cost driver, with higher explanatory power, and improved statistical performance. We are currently undertaking work to assess potential alternative drivers and an area we believe there is likely to be potential to improve modelling is Work Management.

Work Management has four elements:

- Asset Management;
- Operations Management;
- Customer Management; and
- System Control.

Of these Operations Management (as shown in the table above) accounts for the majority of costs and

¹⁸ We note the exception to this is Work Management which did have its own bottom-up model, with MEAV as a driver

¹⁹ A subset of this is also used to model maintenance costs (Maintenance MEAV).

accounts for planning and supervising operatives and contractors working within the work execution processes (largely emergency, repair and maintenance). Given this the level of Operations Management labour required should be related to levels of workload and hence, the same drivers of cost as emergency, repair and maintenance activities. However, at present we are unable to segment Operations Management costs into their related area of work execution due to current levels of RRP reporting (e.g., emergency, repair maintenance etc).

Despite the issue of the portion of Operations Management costs related to each other area of work execution, we have undertaken preliminary analysis to test whether using one of the drivers of emergency, repair and maintenance costs could explain Operations Management costs better than MEAV. We find in general this is true.

Therefore, we believe that Ofgem should consider modelling Operations Management costs in a different way to RIIO-GD2 to improve the statistical performance of its totex model. Specifically, we would be keen to discuss the potential for splitting operations management costs between emergency, repair and maintenance and modelling these together with costs allocated to these areas already.

In addition to potentially improving the modelling of Work Management we also believe the cost assessment process leading up to RIIO-GD3 (involving both Ofgem and GDNs), should seek to:

- consider alternative drivers for other areas of the cost base currently being modelled by MEAV;
- review the make-up of MEAV to ensure unit costs and asset distinctions are appropriate (e.g., some unit costs will need to be updated to account for the latest level of throughput as at RIIO-GD2); and
- review and rectify reporting inconsistencies for certain asset volumes (see our response to GDQ65)

GDQ52. What are your views on the potential of middle-up modelling in RIIO-GD3?

In line with our response to GDQ50, apriori we continue to believe that it is likely a totex level of comparative regression analysis will remain the most robust cost assessment approach at RIIO-GD3. However, we are open to the consideration of middle-up modelling, even if not to actually set allowances, as it could be useful to:

- inform driver selection and structure of any CSV for totex modelling; and
- inform the understanding of any potential issues with cost allocation/capitalisation differences by pooling cost areas; and
- aid allowance disaggregation – if models are sufficiently statistically robust.

Should middle-up modelling be used to set allowances, but the models perform worse statistically than a totex model (e.g., worse explanatory power, or failing of statistical tests) we would expect either (i) less weight to be placed on results in any combination of modelling and/or (ii) the efficiency benchmark to be set at a lower level than the 85th percentile.

In considering whether and how to use middle-up modelling, it is important that Ofgem follows a set of clear principles when developing the models and cost groupings. Most recently, at RIIO-ED2, Ofgem considered, but later dropped, middle-up modelling. Ofgem stated that it decided not to include middle-up modelling in final the cost assessment approach as the models performed less well than the totex models in terms of explanatory power and statistical tests, which may indicate that the middle-up models were not capturing important interactions or trade-offs between different cost categories. Despite this, Ofgem stated 4 principles as guidance for its middle-up approach²⁰:

²⁰ Ofgem (2020) "RIIO-ED2 Sector Specific Methodology Consultation" para. 2.31

1. **Complementarity** - Is there a strong technical/economic reason to believe that activities or groups of expenditure are complementary and should be benchmarked together and a consistent set of cost drivers can be identified?
2. **Cost trade-offs** - Can DNOs (*GDNs*) make trade-offs in expenditure between the different activities/areas included in the cost pool, and so benchmarking those activities/costs together will help avoid biased relative efficiency results or unintended managerial incentives for the DNOs (*GDNs*)?
3. **Cost boundary complexity** - How complex is the boundary of cost reporting data that needs to be defined to benchmark the identified cost pool/activity (e.g., how well defined is the group of costs within Ofgem's regulatory reporting templates)?
4. **Risk of inaccurate/biased models** - Is there too much 'noise' in the data to be confident that including certain types of expenditure within aggregated regressions could lead to inaccurate model results, or coefficient estimates that are difficult to interpret using engineering/economic logic?

In general, these principles are also broadly applicable to gas distribution and therefore are a suitable starting point for developing middle-up models and determining the most appropriate cost groupings.

At RIIO-GD1 Ofgem considered (but eventually did not rely on to set allowances) middle-up modelling split by opex, capex, and repex. The repex model relied on a weighted average repex workload driver, the capex model included a CSV of MEAV, connections workload, and mains reinforcement, and the opex model included an emergency CSV. We understand that Ofgem tested these model specifications at RIIO-GD2 but did not use them to set allowances at draft or final determinations.

We believe that the RIIO-GD1 proposed middle-up models are not robust enough models to include in Ofgem's portfolio of models, and instead it would be more appropriate to expand Ofgem's portfolio of totex models (see response to GDQ50 above). *GDNs* face trade-offs between certain areas of opex and capex costs, and hence running separate models for opex and capex does not consider the "cost trade-offs" principle stated above in the way that totex modelling can. However, it is possible that alternative middle-up cost groupings could be helpful if Ofgem uses disaggregated modelling and identifies cost areas where the allocation between them is a judgement *GDNs* make by trading off one against another, and/or results are sensitive to cost allocation rules. This said, even in cases where there is some logic to combining cost categories into a single regression, there may still remain cost trade-offs that cannot be captured below the totex level.

GDQ53. What are your views on the potential of disaggregated modelling in RIIO-GD3?

In line with our other responses, a priori we continue to believe that it is likely that a totex level of comparative regression analysis will remain the most robust approach for cost assessment at RIIO-GD3. We are open to the consideration of bottom-up modelling, even if it is not used to set allowances, for the same purposes described in response to GDQ52 in relation to middle-up modelling. Cadent itself has used bottom-up models to help inform potential improvements to cost drivers used in totex regressions (e.g., in assessing alternative drivers for work management costs, as opposed to MEAV). Critically, should these types of models be utilised to set allowances, but their econometric performance is worse than totex models, we would expect either (i) less weight to be placed on results in any combination of modelling and/or (ii) the efficiency benchmark to be set at a lower level than the 85th percentile.

In terms of approaches used for bottom-up benchmarking, whilst we recognise the variety of methods used at RIIO-ED2, we would urge caution in diverting from a regression-based approach to simpler methods unless out of necessity, for example, due to data constraint. Regression analysis typically allows for more exogenous variation in costs to be robustly accounted for than alternative techniques highlighted in the SSMC document and other methods such as unit cost benchmarking (as used by Ofwat in previous price controls) meaning less likelihood of falsely attributing cost differences to efficiency differences. Should any alternative and simpler methods be used to set allowances for a particular cost area, we would also expect a lower weighting in any model combination and/or a lower efficiency benchmark being set.

More generally, the inability to use a regression approach for comparative assessment and necessity to use a simpler and less robust approach raises the question of whether comparative benchmarking can be reliably undertaken. Should this be the case, an alternative, and potentially better method of assessment would be to exclude costs from the regression assessment and assess them on a non-comparative basis (similar to non-regressed cost areas).

GDQ54. In your view, what is the most suitable configuration of cost activities for middle-up or disaggregated modelling, that once combined, could form a complete bottom-up assessment of totex?

Before reviewing business plan submissions of all GDNs it is difficult to assert the appropriate configuration of activities to form a bottom-up assessment of totex, as cost trends and step-changes can drastically impact the econometric performance of specific cost drivers and models, and hence determines which models should be relied upon.

That said, should any middle-up and/or bottom-up be used to set allowances, similarly, to combining totex models, when combining these type of models a set of clear principles should be followed.

These include:

- When determining the correct cost grouping for each model, costs included in the same category should be substitutable from a technical or economic perspective, and the category boundaries between different middle-up models should be straightforward to define and enforce (as set out in our response to GDQ52).
- Unless there is a strong reason to proceed otherwise (such as significant differences in statistical performance across models, or biases present in a specific model), results from several models should have equal weighting in the calculation of allowed costs. If there are differences, but worse performing models are used then amendments to the approach of combining models should be made (with options for this set out in our response to GDQ50)
- A single efficiency target should be set only after combining model results at the totex level, to avoid partial benchmarking (as explained further in response to GDQ50) and to ensure the efficiency challenge is set as a reasonable level.
- Including one model which accounts for regional and/or company-specific factors does not negate the requirement of the other models being used to also account for these factors. For example, the inclusion of one model which accounts for density within the regression model alongside or in place of pre-modelling adjustments does not negate the need for regional factors in the other models to be used to set the benchmark (either via similar density modelling or via pre-modelling adjustments).

GDQ55. What do you think would be appropriate criteria for determining cost exclusions for RIIO-GD3?

In general, benchmarking models should aim to explain as much of the efficient cost base of GDNs as possible through selecting appropriate cost drivers, the appropriate functional form, and applying sufficient cost normalisations. As, for example, if costs are excluded and assessed by other means, but exclusions are not consistently made across GDNs this can distort the outcomes of the benchmarking.

This said, however, it is important to recognise that it is unlikely to ever be the case that a regression model is able capture all exogenous variation in costs across GDNs completely. For example, one network may undertake a specific piece of work to deliver a specific output for their customers that no other network does. In this instance, if there is no driver in the regression to capture this activity and costs were not removed from those assessed within the benchmarking model, this would understate the benchmarked efficiency of that network. Given this issue, we support the exclusion of costs from regression assessment where they vary between GDNs and their variation cannot be captured by cost drivers in the regression model.

For the setting of the RIIO-GD2 control, Ofgem removed specific cost categories from submitted totex before the core comparative efficiency assessment where:

1. cost variations across GDNs were ***not well represented by regression cost drivers (i.e. it was not possible to develop a robust cost driver)***^{21 22}
2. they related to ***large and atypical capex*** (uncommon across the networks, lacks historical comparators, or is highly unique) – using a £5mn materiality threshold^{23 24}
3. they related to ***bespoke outputs*** to be delivered by a GDN or were ***uncertain*** in size or scope

Applying these criteria to the GDN cost base, Ofgem removed both historical and forecast costs for areas set out in in Table GDQ55.1 below.²⁵

²¹ Ofgem (2023) “RIIO-3 Sector Specific Methodology Consultation – GD Annex”, P. 83, see here: [RIIO-3 Sector Specific Methodology Consultation – GD Annex \(ofgem.gov.uk\)](#) Accessed: 13/02/2024

²² CMA (2021) “Cadent Gas Limited, National Grid Electricity Transmission plc, National Grid Gas plc, Northern Gas Networks Limited, Scottish Hydro Electric Transmission plc, Southern Gas Networks plc and Scotland Gas Networks plc, SP Transmission plc, Wales & West Utilities Limited vs the Gas and Electricity Markets Authority: Final determination Volume 3: Individual Grounds”, Pg 17, Para. 9.52, see here: [Final determination Volume 3: Individual Grounds \(publishing.service.gov.uk\)](#) Accessed: 13/02/2024

²³ Ofgem (2023) “RIIO-3 Sector Specific Methodology Consultation – GD Annex”, P. 83, see here: [RIIO-3 Sector Specific Methodology Consultation – GD Annex \(ofgem.gov.uk\)](#) Accessed: 11/01/2024

²⁴ CMA (2021) “Cadent Gas Limited, National Grid Electricity Transmission plc, National Grid Gas plc, Northern Gas Networks Limited, Scottish Hydro Electric Transmission plc, Southern Gas Networks plc and Scotland Gas Networks plc, SP Transmission plc, Wales & West Utilities Limited vs the Gas and Electricity Markets Authority: Final determination Volume 3: Individual Grounds”, Pg 7, Para. 9.10, see here: [Final determination Volume 3: Individual Grounds \(publishing.service.gov.uk\)](#) Accessed: 11/01/2024

²⁵ Note this also includes additional costs mentioned to those in Ofgem’s RIIO-3 Sector Specific Methodology Consultation – GD Annex as it includes areas where separate submissions were made in the GD2 process to original business plans (e.g., electric/zero-emission vehicles), costs excluded as they were uncertain and moved to UMs (e.g., Loss of Land Development) and costs funded via UIOLI allowances (for vulnerability and net zero and re-opener development related activities)

Cost exclusion	Method of assessment
Bespoke Outputs (including bespoke repex programmes)	Technical assessment
Capex Projects > £5m (inc LTS rechargeable diversions)	Technical assessment
Gasholder Demolition	Technical assessment
Cyber Security	Technical assessment
Physical Security (PSUP)	Technical assessment
Electric/zero-emission vehicle costs (incremental on conventional ICE vehicles)	Technical Assessment
MOBs	Non-regression assessment
Streetworks	Non-regression assessment
Repex Diversions	Non-regression assessment
Smart Metering	Non-regression assessment
Land Remediation	Non-regression assessment
Growth Governors	Non-regression assessment
SIU Opex and Capex (Scotland only)	Non-regression assessment
Loss of Land Development Claims	Non – no baseline funding
Vulnerability and Carbon Monoxide Awareness	Non – UIOLI allowance given
Net Zero and Re-opener development	Non – UIOLI allowance given

Table GDQ55.1: Costs excluded from comparative regression assessment at RIIO-GD2 (post CMA remedies)

Whilst these criteria are a good starting point, based on our experience at RIIO-GD2, and the differences in work to be delivered in RIIO-GD3 amongst the GDNs, we believe they must be built on in three ways.

Removal of large capex projects should be made consistently and only apply to projects if they are atypical, not just large

Apart from connections and reinforcement activities, capex in RIIO-GD2 was modelled in the totex regression by MEAV. Given this we can understand why Ofgem would want to exclude atypical capex which varied across networks as increases in costs specific to a network would unlikely be well modelled by the driver. We can also understand why Ofgem would want to adopt a materiality threshold to determine costs to be excluded as there are likely to be a multitude of atypical capital works across GDNs whose costs will not be captured by differences in network scale. However, based on our RIIO-GD2 experience we believe the practical application of Ofgem's criteria to capital spend needs to change for RIIO-GD3 as it was not always consistently applied across the cost base and networks.

Firstly, at RIIO-GD2 Ofgem did not remove capital costs associated with LTS Rechargeable Diversions. This was an aspect Cadent successfully appealed via the CMA (for those greater than £5m in gross costs), as these costs were atypical, not captured by any cost driver within the regression, and above the materiality threshold. As this was not part of Ofgem's Final Determinations

this was only applied to Cadent networks' cost assessment meaning effectively 'two benchmarks' were set for the industry for RIIO-GD2. In order to avoid this going forward, it is important to identify the appropriate exclusions within the price control itself.

Secondly, having reviewed the exclusions made for large and atypical capex we believe that in some cases investments that are large, specifically greater than £5m, do not appear atypical or specific to a given network. Whilst some are clearly related to atypical and large works (e.g., SGN's Scotland network's Dunkeld diversion and NGN's Transpennine project), others seem to reflect activities all GDNs would undertake at some point in time (i.e., they may have historical comparators and are not especially unique). They have only been excluded because they happen to be above £5m. In such a case this overstated the efficiency of networks who had these costs removed. Therefore, moving forward we believe the application of Ofgem's criteria needs to be reviewed, with a more objective definition given to what is atypical and not, to ensure only capex which is both large *and* atypical is removed from totex.

Finally, we also believe pragmatism should be exercised when utilising the £5m materiality threshold – applying it as a guideline. In particular, so where projects with a cost that are still significant, but perhaps not reaching over the materiality threshold, are arbitrarily not considered for exclusion even though they may be atypical as this could still bias the outcomes of any regression analysis. This does not mean lowering the materiality guideline from current levels per se, just applying it in a pragmatic manner by considering exclusions for specific projects where those projects fulfil (other criteria see below) but may be proportionally below materiality. Doing so would be in line with precedent set for the exclusion of bespoke repex programmes such as Cadent's Lowestoft Harbour at RIIO-GD2 (which had a cost below £5m).

Any removal of costs needs to be robust to different cost allocation and capitalisation policies and/or the delivery of the same outputs through different activities

Exclusions at RIIO-GD2 were made at a totex level. As such, the removal of costs to deliver a specific output must be consistent across GDNs, even if for some, costs are capitalised and for others they are not and if GDNs allocate costs across different categories. For example, in the case of capitalisation, if capex is excluded due to the inability to model it within a regression and as it is sufficiently large to fulfil any materiality threshold, similar costs should also be excluded for other GDNs where they also deliver similar outputs but as opex. Were only the capex to be excluded this would overstate the efficiency of networks who incurred the capex and bias the assessment of relative efficiency. We believe this was the case in some areas excluded related to asset health capex and maintenance work at RIIO-GD2. We also raised this at Draft Determinations at RIIO-GD2 in relation to the exclusion of IT capex and were pleased to see this included within final cost assessment model. It may also be the case that opex activities are required to support the delivery of large and atypical third-party driven works (such as the need to undertake surveys in conjunction with projects requiring LTS Rechargeable Diversions). Where this occurs we believe these costs should also be excluded, as though opex, they are only being incurred as a result of atypical capex activities²⁶. At RIIO-GD3 we believe where any exclusion is made networks should be consulted about whether they have costs to deliver/enable similar outputs elsewhere in their plans, no matter where they are in the cost base to ensure consistent exclusions from assessment.

²⁶ Note these opex costs are different to overheads, which were 'carved out' from capex cost exclusions at RIIO-GD2

Large and atypical repex projects also need to be considered for exclusion as well as capex

At RIIO-GD2 some cost exclusions were made to repex to reflect bespoke programmes of repex which had unique aspects. For example, for Cadent we had our London Medium Pressure and Lowestoft projects excluded and separately assessed for our North London and Eastern networks respectively. As we now turn to RIIO-GD3, we expect there will be a larger volume of repex projects being undertaken within some areas we manage that lacks historical comparators, and has other unique characteristics not seen, or not as prevalent, across other networks, which may not be possible to model robustly in comparative regression analysis through use of current drivers. For example, we anticipate the need to continue similar works to our London Medium Pressure project in RIIO-GD3 in our North London network. We will also need to replace significant volumes of Asbestos mains in our North West network, amongst other projects. As such, we believe the criteria relating to large capex projects for cost exclusion should also be extended to repex projects so that all investment activities and delivery of related outputs (including related operational costs – see above) can be assessed appropriately.

Building on the RIIO-GD2 approach

Based on our suggested improvements above we believe Ofgem should use an amended set of criteria to determine cost exclusions at RIIO-GD3, removing costs from comparative regression assessment where

- cost variations across GDNs are **not well represented by regression cost drivers**. Specifically, there must be no cost driver which has:
 - an intuitive economic relationship to costs; and
 - robust statistical performance (an estimated statistically significant coefficient, and high explanatory power, primarily and/or passing of key statistical tests).
- they relate to **large projects** (uncommon across the networks, lack historical comparators, or are highly unique) – using a £5mn materiality *guideline*
- they related to **bespoke outputs** to be delivered by a GDN or were **uncertain** in size or scope.

We have preliminarily applied these criteria on a qualitative basis to identify which areas could be considered for separate assessment by Ofgem. Based on this analysis we believe that the majority of exclusions made by Ofgem at RIIO-GD2 are likely to remain valid. However, there some areas we feel could be considered for additional exclusions from comparative regression assessment for RIIO-GD3, some that no longer need exclusion for the GD3 period (but which still require excluding historically) others that may not meet the criteria for exclusion and so could be considered for inclusion in the regression analysis. These are set out below.

Additional areas which may warrant exclusion:

- **Large and atypical repex projects (and related costs)** – building on our suggested change to the exclusion criteria, large and atypical repex projects should be excluded from comparative regression analysis (including any related project-specific costs also sitting within opex). Whilst this would need to be assessed based on the specific characteristics of projects put forward for RIIO-GD3 and the ability for any variation in costs to be captured by cost drivers, we expect the nature of a number of projects within our plan could be atypical to those delivered by other networks and delivered by Cadent at RIIO-GD1 and GD2.

- **LTS diversions: non-rechargeable and rechargeable smaller than £5m** – under the RIIO-GD2 framework, following application of CMA remedies, all repex diversions and LTS rechargeable diversions exceeding £5m were excluded from regression analysis. The CMA did not instruct GEMA to remove smaller and non-rechargeable diversions, however, as they considered that with other LTS, Storage and Entry costs, given the dataset used at the time, they could be modelled by MEAV. Notwithstanding this, we still remain of the view that as LTS diversions are not driven by network scale and inclusion of any could distort comparative regression analysis. As such, we believe the exclusion of these costs warrants reconsideration. We also note that the exclusion for all LTS diversions from GD3 regression analysis would be consistent with Ofgem’s work at RIIO-ED2 which found that “*We (Ofgem) do not see a strong rationale for MEAV or network scale generally being the key driver for diversions activity and so do not consider a change to a MEAV-based benchmarking method to be appropriate.*”²⁷
- **Third-party driven opex associated with large projects atypically incurred across networks** – building on the point we noted regarding capitalisation. It may be the case that networks incur disproportional operational costs to enable/support larger customer driven works such as LTS Rechargeable Diversions (e.g. through the need for surveys and potentially alternations) or other large projects. For example, we have identified survey work which is reported in maintenance opex relating to large LTS rechargeable diversions, such as that required to enable the HS2 rail project. At present these are modelled via maintenance MEAV which does not explain the cost – similar to how MEAV does not explain the associated capex for the LTS diversions. Where this is the case removal of only capex elements will not remedy the distortion in any comparative benchmarking if related opex elements are also not removed. We therefore, think it is important Ofgem engage proactively with GDNs to understand where this is the case and exclude these costs also.
- **Additional MOBs costs not removed at RIIO-GD2** – as stated in Ofgem’s SSMC GD annex at RIIO-GD2 it excluded costs relating to MOBs at RIIO-GD2 for non-regression assessment. However, costs were only excluded where they were included in Maintenance, Connections and Repex. We incur costs which fall outside of these categories, but are still related to MOBS and so therefore also need to be considered as part of separate MOBs assessment for RIIO-GD3 (e.g. in relation to Work Management, such as costs relating to our development of High Rise Building Plans – see our response to GDQ49). Similar to above, we therefore, think it is important Ofgem engage proactively with GDNs to ensure where a particular activity is to be separately assessed they remove all relevant costs for assessment to avoiding distorting any subsequent comparative regression analysis.

In addition to these areas we note there will be an interaction between some of the proposed changes to funding mechanisms between RIIO-GD2 and RIIO-GD3 set out in the SSMC which have implications for cost assessment. These include, but are not limited to:

- **activities which currently sit within the VCMA UIOLI allowance if moved into baseline allowances.** Based on the levels of spend made in RIIO-GD2 we expect costs across our networks are likely to be disproportionate to others and will not be reflective of cost drivers in Ofgem’s totex regression at present. As such they also may warrant exclusion should they be included in ex-ante allowances; and
- **Tier 1 stubs costs** which were funded in different ways across GDNs at RIIO-GD2, and whose assessment would require work to develop at GD3 – particularly to consider whether and if they should be included within regression analysis or excluded.

²⁷ Ofgem (2022) “RIIO-ED2 Final Determinations Core Methodology Document”, Page 282, Para 7.281, see here: [RIIO-ED2 Final Determinations Core Methodology Document \(ofgem.gov.uk\)](#) Accessed: 11/01/2024

In each case, and for other cost areas, we believe Ofgem should work closely with GDNs to understand whether costs incurred across these areas meets any of the criteria for exclusion and as such, should be treated separately to costs that are comparatively assessed via regression analysis (or not).

Areas not needing exclusion for the RIIO-GD3 period:

- **Gasholder demolition** – as noted in the SSMC GD Annex, work to decommission gasholders should be complete by the end of RIIO-GD2. As such, there is no need to remove and assess any costs for the forthcoming price control. However, we believe historical costs should still be removed to ensure consistency of the dataset in estimating any regression for comparative analysis.

Areas which could be considered for inclusion in core comparative regression analysis:

We have also identified three areas which could be considered for inclusion in the core regression analysis at RIIO-GD3 which were excluded at RIIO-GD2. These are:

- Growth governors
- Electric/zero-emission vehicle costs
- Non-atypical large projects (following our views set out above).

More detail on these areas and our rationale for why they could be considered for inclusion is set out in our response to GDQ62.

Our initial views are unlikely to be exhaustive, however, and we will only know what cost categories it is appropriate to exclude once plans are submitted and the criteria can be properly applied. We suggest that Ofgem seeks to develop and apply criteria for cost exclusions collaboratively with GDNs throughout the GD3 process. We believe this could be usefully achieved through the CAWG forum and could start with determining the cost exclusion criteria (and cost categories where possible) upfront. GDNs could then propose specific cost exclusion items as part of their submissions (in BPDTs or Business Plans). Ofgem could then consult with GDNs to determine specific exclusions made once business plans are submitted. This would help ensure all exclusions are consistent and avoid potential issues as highlighted above.

GDQ56. What are your views on the modelling treatment of workload adjustments for RIIO-GD3?

Regardless of the precise modelling approach to be taken, we believe that Ofgem should seek to minimise the need for any workload adjustments due to different planning assumptions, where possible. For example, when determining work needed under different future energy scenarios. To support this, it is essential Ofgem: (i) gives prescriptive guidelines about what assumptions to make regarding future uncertainties when performing business planning and (ii) is clear on the implications of potentially different workload assumptions upfront, so that it can incorporate them accurately in the modelling approach once determined. To facilitate this, Ofgem needs to put in place a reporting structure in Business Plan Data Tables (BPDTs) that creates transparency on costs and volumes associated with areas of activity where GDNs may choose, to deliver different levels of output, such as in meeting different future energy scenarios. We have seen from the RIIO-ED2 price control the

difficulty of incorporating a wide range of planning and workload assumptions in cost assessment approaches when guidance is broad.

Notwithstanding this, we understand in some cases Ofgem will wish to adjust workloads based on insufficient justification from networks. Where this is the case, we think what is most important to ensure is that:

- **Ofgem's workload adjustments are transparent and distinct from any adjustment to submitted costs for efficiency.** As set out in our response to GDQ61 for Streetworks at GD2, the approach used to assess cost implicitly made judgements about workload and efficiency together in a non-transparent way. This, together with application of 'catch up efficiency' we believe led to double-counting of expected efficiencies and set an overly stretching allowance for these costs, with little precise information on workloads to be delivered for costs incurred; and
- **Ofgem performs any workload adjustments in a way that avoids distorting the comparative regression assessment of GDNs' costs.** To do so we would suggest considering any workload adjustment ahead of any comparative analysis and removing volumes from cost drivers (where relevant) as well as costs from the relevant area of totex based on the associated costs submitted by GDNs in business plans.

GDQ57. What are your views on the approach to regional factors for RIIO-GD3?

Whatever regression model or models are chosen to compare GDN costs it/they will not be able to capture all exogenous drivers of GDN costs. For example, under the current RIIO-GD2 model any factor which impacts GDN costs, but which is not correlated with the CSV, will be captured in the difference between costs the model estimates and those actually incurred and deemed inefficiency. Whilst some of this difference may be due to actual inefficiency it may also be due to upward cost pressures a particular network faces out of its controlled and not controlled for through Ofgem's regression analysis (i.e. the regression would suffer from so-called 'omitted variable bias').

Ofgem has recognised the potential for this at previous price controls and so made a number of pre-modelling normalisations to seek to make costs comparable when regressing them against the CSV. In our responses to GDQs 55 and 59-62 we provide our views on the determination and exclusion of specific cost categories from comparative regression analysis. In addition to these adjustments, however, Ofgem has also previously recognised there may be other exogenous cost factors which vary in their applicability geographically and are not sufficiently accounted for through exclusions or within the existing regression model(s). These are called 'Regional Factors'.

Broadly there are two types of approaches that can be taken to account for regional factors:

1. **Pre-modelling adjustments** – where before any comparative regression analysis is undertaken, costs are adjusted to 'remove' any identified impacts of exogenous regional cost drivers; or
2. **Within-model approaches** – where cost drivers are added as explanatory variables to the regression model to capture the variation in cost associated with variation in the cost driver (often these are referred to as 'density models').

At RIIO-GD2 Ofgem used pre-modelling adjustments to account for regional factors. Specifically making four adjustments itself to attempt to account for regional differences in:

- Labour costs – to reflect regional wage disparities
- Urbanity:

- related to labour productivity
- reinstatement costs for some GDN activities
- Sparsity – for example, in order to meet emergency response standards in sparse areas

In addition, Ofgem allowed GDNs to propose factors for incorporation in analysis under a ‘company-specific factors’ claims-based regime.

In contrast, Ofwat in its PR19 assessment of water company business plans and more recently as part of PR24 have made greater use of within-model approaches. By incorporating cost drivers to account for the impact of network density on efficient costs. This approach included cost drivers related to population and/or network density to be used to explain most, but not all, of the regional cost impact within their regression models (i.e. the within-model approach was used in conjunction with pre-modelling adjustments). As part of this approach, Ofwat considered a variety of density measures based on both network density (e.g., customers per length of network) and population density.

Whilst each approach can achieve the goal of accounting for a set of regional factors, each has its own distinct advantages and drawbacks:

- Pre-modelling adjustments are often easier and more transparent to implement and interpret as they involve discrete and specific adjustments to costs. However, pre-modelling adjustments rely on the ability of Ofgem (and individual GDNs in the case of company-specific factors) to accurately identify and quantify all factors as well as account for any interactions which may enhance or diminish the net impact on GDN costs. In practice such an approach can be subjective and where factors which cause upward pressure on costs are not sufficiently recognised, this method leads to underfunding of affected networks.
- Within-model (density) approaches in contrast allow the model to identify the statistical relationship between density and cost, therefore avoiding the need to quantify specific factors, understand and account for their interactions and create a robust, objective and consistent way of controlling for differences between different geographies. However, the number of GDNs mean Ofgem has limited degrees of freedom within its models restricting the number of explanatory variables it can use whilst maintaining a robust model specification.

In reality, neither approach is perfect in isolation. As noted, pre-modelling adjustments are unlikely to ever fully reflect all regional factors and be able to account for their interactions. Density approaches whilst able to capture interactions of factors that relate to the same underlying cause (e.g., network or population density), anything which is not correlated with the driver sufficiently (e.g., regional wage impacts) will not be captured. As such, we would encourage Ofgem to utilise both approaches in a multi-model regression assessment – with one, or several models using pre-modelling adjustments only and one or several others using density approaches (and pre-modelling adjustments where density variables do not sufficiently capture some regional factors).²⁸

To implement this approach we would propose Ofgem undertakes two streams of analysis throughout the price control. These are described further below:

Reviewing and updating existing pre-modelling adjustments, where possible

Of the pre-modelling adjustments made by Ofgem for regional factors, the evidence underpinning two were not updated for RIIO-GD2. Indeed, the specific adjustment to be made for urbanity productivity differences for certain activities was based on analysis from SGN at RIIO-GD1 and the sparsity adjustment is based on analysis from WWU from GDPCR1. For RIIO-GD3 therefore, continuing

²⁸ For the avoidance of doubt we believe this approach should also apply to company-specific factors proposed at RIIO-GD3 as well as for the factors Ofgem adjusts for itself in the cost assessment approach

without reviewing these adjustments would mean relying on data and analysis from price controls set over a decade ago (and over 15 years ago in the case of the sparsity adjustment).

We think it is imperative that Ofgem review (i) the evidence underpinning these adjustments and (ii) the cost categories they cover to ensure they are appropriate for the upcoming price control. It may be that revised analysis corroborates these previous pieces of work, but given the passage of time we believe it is important to ensure adjustments used are still appropriate. We are currently undertaking our own analysis on these areas and will submit this as part of our GD3 Business Plan submission.

Whilst regional labour adjustments and urbanity reinstatement adjustments were also introduced at GDPCR1 and RIIO-GD1 respectively they are updated with new ONS data at each price control. Notwithstanding this we believe that improvements to each of these regional factors could be made for RIIO-GD3 to ensure their sufficient recognition:

- **Urbanity Reinstatement:** we are currently reviewing Ofgem's approach to adjusting reinstatement costs to reflect the impacts of operating in urban environments and believe they could be built on as they (i) only focus on impacts on costs through unit cost/price differences (specifically as they assume all costs are labour and adjust them in the same way as the regional labour adjustment) and (ii) only are made to a subset of activities, when the same factor may affect other cost categories. We are currently undertaking our own analysis on these areas and are keen to discuss them as part of future Cost Assessment Working Groups and as part of our GD3 Business Plan submission.
- **Regional labour:** we are also reviewing Ofgem's approach to adjusting GDN local labour costs to account for exogenous regional labour cost variation across regions. We are reviewing all aspects of the methodological approach to the factor including data sources, level of occupation specificity in wage data, geographical granularity and coverage of employee costs accounted for amongst other areas. Our analysis to date suggests the current adjustment requires review across three areas initially²⁹:

1. Geographical definition of regions receiving a regional labour adjustment

Across different geographies of Great Britain (GB) there are a variety of local labour market forces impacting prevailing wage rates that GDNs must pay to their local labour forces. Whilst ordinarily labour mobility and other market forces would be expected to reduce any differential wages between geographies, it has long been accepted that exogenous factors (outside of GDN control) lead to significant and persistent wage differentials between London and the surrounding areas, compared to the rest of Great Britain.³⁰ Most recently, within the ED2 price control Ofgem maintained their position that there is "*sufficient mobility of labour to mitigate wage differentials throughout GB, however productivity and cost of living factors in London, and to a lesser extent in the South-East, lead to persistent wage inequality*".³¹ Therefore, to reflect this differential, in all previous RIIO price controls for gas and electricity networks Ofgem have adjusted the cost of local labour for networks to reflect exogenously driven labour cost/wage differentials in London and the 'South-East' regions.

In reviewing the approach to adjusting costs, we believe revision is required to the precise geographical definition used by Ofgem to define regions receiving a regional labour cost adjustment. The regions used in Ofgem's analysis are determined by the underlying ONS

²⁹ Further changes may be required pending completion of our full review

³⁰ Ofgem (2022), "RIIO-ED2 Draft Determinations – Core Methodology Document" Pg. 232, Paras 7.38

³¹ IBID, Para 7.39

Annual Survey of Hours and Earning (ASHE) dataset. This splits GB into the 11 International Territorial Level (ITL) Statistical Regions. These are commonly used sub-national geographical definitions adopted by the ONS to present a range of socioeconomic data.

Figure GDQ57.1 below sets out the geographical boundaries of the London and 'South-East' ITL regions which receive a regional labour cost adjustment – with all other GB ITL regions not receiving any adjustment³². As shown, the current regions used lead to a counterintuitive outcome. Specifically, due to the definition of the South-East ITL, rural Kent and areas as geographically as far away from London as Milton Keynes do receive a regional labour adjustment, but areas in Hertfordshire, Bedfordshire and Essex, which actually border London and evidence suggests are subject to the same labour market forces as, currently receive no adjustment (as they lie in the 'East' ITL region defined in the dataset).

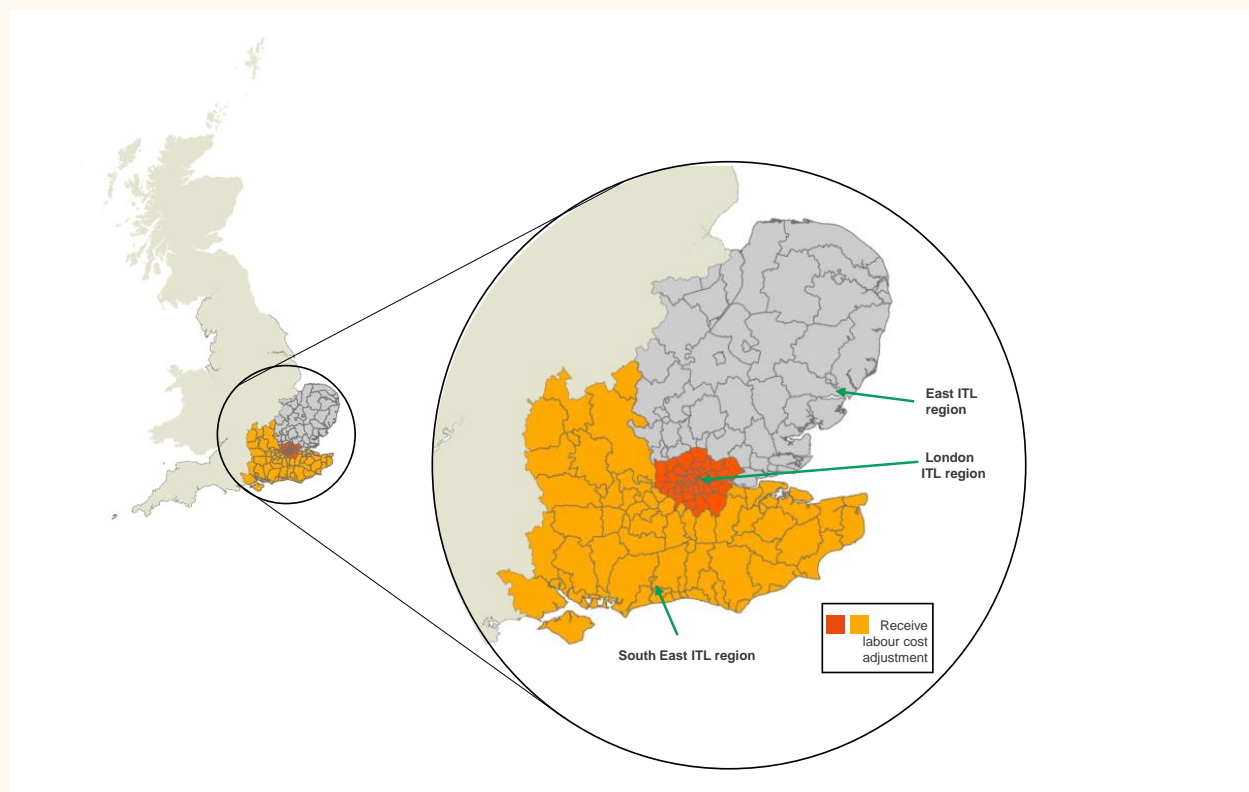


Figure GDQ57.1: Regions currently receiving a regional labour cost adjustment under Ofgem's RIIO-2 approach

Were Ofgem's current approach to be accurate this would imply that wage dispersion across the South-East and East ITL regions, is asymmetric, with areas to the North-East of and directly bordering London having materially lower wages. However, we have conducted analysis on the same ONS ASHE dataset which also contains data at greater geographical granularity than used in Ofgem's adjustment (specifically at the Local Authority level), which suggests this asymmetry does not hold in practice.

Using 21/22 data, we have calculated levels of 'relative wages' (gross hourly earnings in a local authority divided by the population weighted average for Great Britain). This analysis shows

³² It is important to note that while the South East ITL region receives a labour adjustment this a smaller adjustment than that made for the London ITL region

that similar high levels of wages exist in the areas directly bordering London to the North-East as to those directly bordering London elsewhere. For example, local authorities bordering and in the direct vicinity of London to the North-East (and in the East ITL region) have a population weighted average wage level that is 9% above the GB average wage, similar to that of local authorities bordering London which fall in the South East ITL region. These have a population weighted average wage level that is 13% above the GB average.

In addition, Figure GDQ57.2 below presents a heatmap of relative wages for 21/22 and shows that wage dispersion across both the East and South East ITL regions is similar. For example, in the East ITL region: wages across local authorities range from lower than the GB average by 20% to above by 31%.³³ Similarly, in the South-East ITL region: wages across local authorities range from lower than the GB average by 21% to above by 35%

It is important to note though that due to the type of data published by the ONS within ASHE, data at a greater granularity than ITL region level is not occupation-specific (as used by Ofgem in its regional labour adjustment), but reflect the general level of wages in specific local authorities. However, we do not believe this invalidates any of our analysis and conclusions as both datasets should reflect the same “*cost of living factors in London, and to a lesser extent in the South-East, (which) lead to persistent wage inequality*”.³⁴

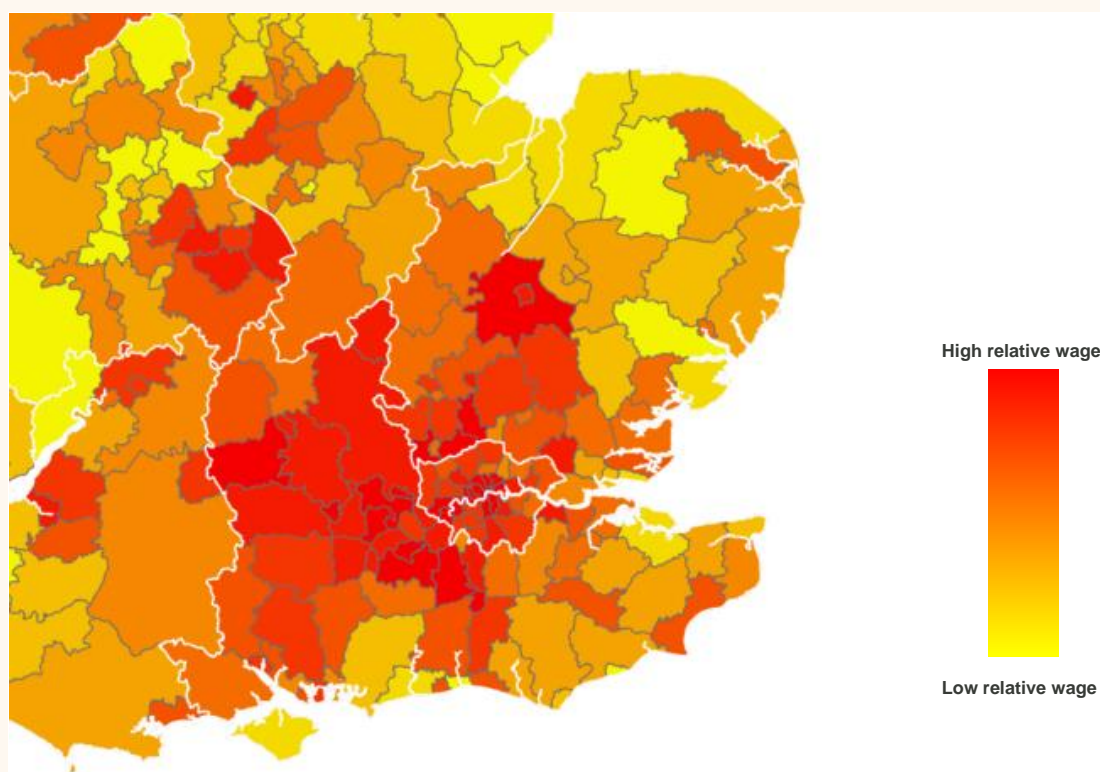


Figure GDQ57.2: General wage dispersion in and around London (Gross Hourly Earnings 21/22)

This shows In addition, it is also worth noting that it shows wage dispersion across both the East and South East ITL regions is similar. For example, in the East ITL region: wages across

³³ The GB average wage in this analysis is calculated as the population-weighted average of local authority wage levels

³⁴ IBID

local authorities range from lower than the GB average by 20% to above by 31%.³⁵ Similarly, in the South-East ITL region: wages across local authorities range from lower than the GB average by 21% to above by 35%.

Given this, the exclusion of these geographical areas to the North-East of London, currently within the East ITL region, is both arbitrary and unfounded in statistical evidence. Furthermore, this means that Cadent's North London and Eastern networks, which cover the areas to the North-East of London, receive an insufficient labour adjustments before costs enter Ofgem's regression analysis, resulting in the model mischaracterising higher wage levels (as a result of geographic location) as inefficiency.

To remedy this we have developed an approach which seeks to maintain the relevance and use of the occupation-specific dataset Ofgem currently utilises to make its regional labour adjustments, but which also uses the additional local Authority level ASHE dataset. Specifically, we believe Ofgem should utilise the more geographically granular ASHE dataset to 'move' the regional boundary of the areas receiving a regional labour adjustment so that they also include Hertfordshire, Bedfordshire, and Essex. Doing so would then mean that in totality, the areas receiving an adjustment would they reflect the previously used Standard Statistical Region (SSR) known as 'South-East'. This is shown in Figure GDQ57.3 below.

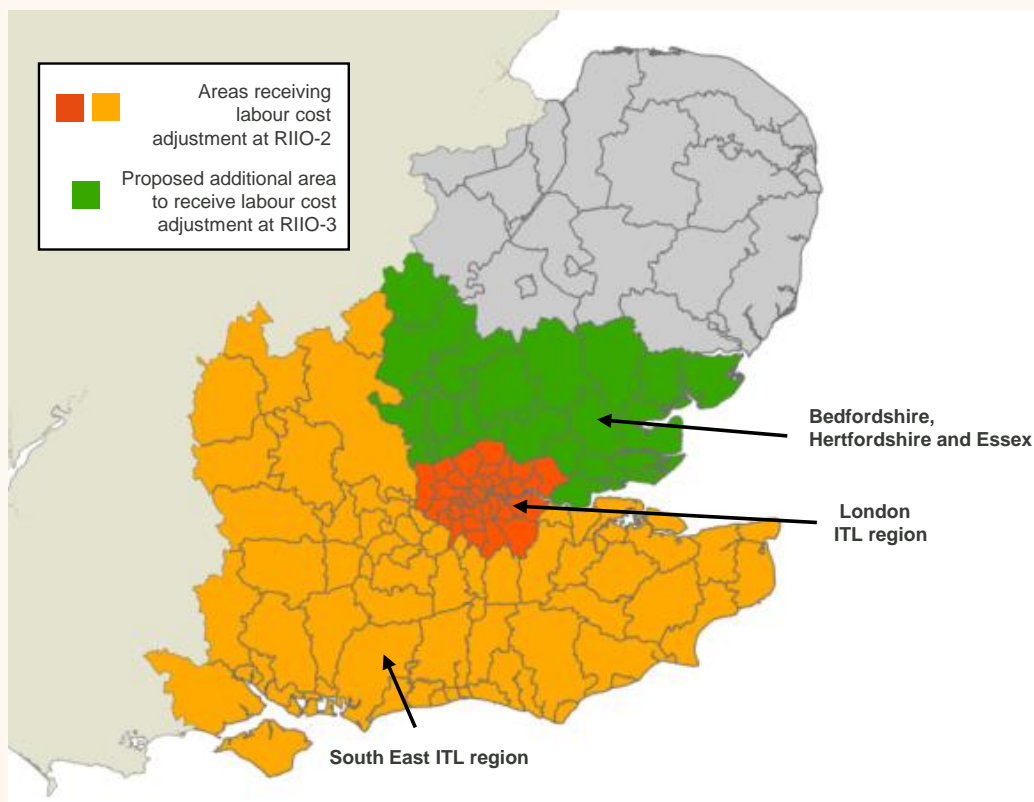


Figure GDQ57.3: Proposed areas to receive a regional labour adjustment for RIIO-GD3

The SSRs were the previously used regional geographical definition utilised by Government prior to the introduction of, what became ITLs, (from 1994-1997). The SSRs more closely reflect regional and economic planning areas that were originally introduced in the 1960s and were only changed to ITL boundaries to allow for:

- the re-organisation of local government in England, Wales and Scotland;

³⁵ The GB average wage in this analysis is calculated as the population-weighted average of local authority wage levels

- better alignment between areas used for administrative and statistical purposes; and
- to produce regional areas with more similar populations.³⁶

We are keen to discuss our analysis and the practical approach we have developed for making this adjustment with Ofgem and will seek to do so throughout the RIIO-GD3 process. We will also include further detail in our Business Plan submission.

2. Extension of the coverage of the adjustment to cover Employers National Insurance contributions

Ofgem's regional labour adjustment is made based on gross hourly earnings. However, this does not reflect the entirety of costs that employers (GDNs) face for utilising staff locally in more expensive areas. In addition to earnings paid to the employee, GDNs must also pay National Insurance Contributions. However, these contributions only need to be made by GDNs for earnings by employees over £9,100 per annum. There is clear and accepted statistical evidence that the gross hourly earnings of employees in certain geographies are materially higher due to exogenous labour market forces outside of GDN control. This means in those regions GDNs will also be required to pay proportionally more National Insurance contributions which increases the disparity in labour costs across GB geographies.

We believe therefore a further amendment is needed to Ofgem's method for adjusting regional labour costs and we have developed an approach to build this on top of Ofgem's existing analysis. We are keen to discuss the practical approach we have developed with Ofgem and will seek to do throughout the RIIO-GD3 process. We will also include further detail in our business plan submission.

3. Review of local labour proportions

Ofgem's regional labour cost adjustment is only applied to labour employed locally. For most activities these are either assumed fully local or not. However, at RIIO-GD2 there were two activities, Work Management and Training and Apprentices, which were assumed to be partly carried out locally. Indeed, based on information we provided, Ofgem adopted assumptions of 44% of Work Management needing to be carried out locally, and 85% of Training & Apprentices costs. We are currently reviewing these proportions and will share updated analysis with Ofgem when appropriate.

We also believe that it is imperative that Ofgem also review other existing pre-modelling adjustments for company-specific factors put forward at RIIO-GD2 to consider if these should persist into RIIO-GD3. Our views on company-specific factors are set out in our response to GDQ58.

Developing and implementing a framework to test and utilise density models

Alongside evolving regional factors for RIIO-GD3 we believe Ofgem should also consider the use of density modelling as a complementary method of reflecting exogenous cost drivers within its comparative regression analysis of GDN costs. To achieve this we think Ofgem should follow a five-step process by:

³⁶ Twigger, R. and Morgan, B. (1997) "The New Statistical Regions: research paper 97/67", House of Commons Library, 22 May 1997, see here: [New Statistical Regions \(parliament.uk\)](https://www.parliament.uk/publications/2000/01/new-statistical-regions) Accessed: 28.12.23

1. **Considering a wide variety of density cost drivers to capture exogenous regional cost variations** – analysis of density within energy has predominantly been focussed on ‘network density’, most often measured by customers divided by length of network. However, there are a variety of variables that could be utilised exogenous cost variation not captured within cost drivers in Ofgem’s regression model(s). For example, Ofwat has previously used a weighted average population density variable within its cost assessment models (which it is currently refining as part of the determination of its PR24 price control) as well as a ‘high density’ variable to capture areas with particularly high concentration of population that could be ‘averaged out’ in other measures. When constructing and testing density models, Ofgem should consider different configurations of density cost drivers, and compare their relative suitability to the gas distribution sector, and econometric performance.
2. **Establishing the regional factors which these variables should (and should not) capture if included in models** – whilst density variables have the ability to capture some regional cost variations, there are others that will remain distinct. Such as the regional labour cost adjustment. Furthermore, this will vary depending on the precise density variable utilised. For example, network density measures will capture cost variations due to having a high amount of network to serve a given number of customers whereas population density will capture cost variations due to the need to service many customers in a small geographical area. Whilst the two may be related they are not the same, and if a network has a company-specific factor which impacts costs via population density, but only network density is included in the regression, the correlation between the two may not be strongly enough so that the effects of the company specific-factor are captured. Therefore, for any variable considered, Ofgem must look across the alternative regional and company-specific factors proposed to understand which are captured by density variables included or are additional to those included.
3. **For factors not captured, maintaining the use of pre-modelling adjustments** – where the impact of some factors will not be captured by density variables, pre-modelling adjustments proposed and will be required on top of any density adjustment in a particular model. However, where density variable are expected to capture impacts on costs of other factors put forward pre-modelling adjustments should not be made so as not to ‘double count’ any adjustment.
4. **Developing a set of acceptance criteria for the use of density variables in models** – having determined which pre-modelling adjustments are needed for each density variable to test, Ofgem should then define a set of objective acceptance criteria for the use of density models. As density models in themselves are alternatives to Ofgem’s current regression model, we believe any acceptance criteria should build on the criteria Ofgem would apply to consider any regression model and variables within it (i.e. statistically significant coefficients on cost drivers, high explanatory power, intuitive economic relationships between variables, and passing of key statistical tests). It may also be appropriate for this criteria to explicitly address (to allow testing for) potential concerns with density modelling highlighted at the RIIO-GD2 CMA appeals to establish if certain variables lead regressions to become ‘over-fitted’.

We do not believe, however, that the shape of the relationship between density and costs should be included in the acceptance criteria. Having an a priori requirement on the shape of the relationship between density and costs is inappropriate as the relationship between density and cost will vary between cost areas (and this means it is uncertain what the expected shape would be at the totex level).

Furthermore, from our review of the academic and regulatory literature on density models, we do not find consensus on the appropriate functional form for a density model with this varying by context. Regulatory and academic studies we have reviewed show that different quadratic and linear relationships between density and cost are possible. For example, Ofwat found there to be a quadratic relationship between density and costs at PR19.³⁷ In our context, Ofwat’s estimated “U-shaped” relationship between costs and density might not be present for gas distribution networks, which are – unlike water networks – often not universally rolled out in

³⁷ Ofwat (2019) “Supplementary technical appendix: econometric approach”, see here: [Equifax \(ofwat.gov.uk\)](https://www.ofwat.gov.uk/equifax/) Accessed: 14.02.24

the most rural areas of the country, thus setting gas and water apart in their cost structures. As further support for this, studies from German gas and electricity distribution sectors and the Slovenian electricity distribution sector use linear density models.³⁸

- 5. Developing objective tests of the criteria and assess density driver performance in regression models against the criteria** – for each of the criteria Ofgem could then test the performance of density variables objectively through robust statistical testing procedures applied to estimated models and by reviewing the results against relevant economic literature and with engineering input to rationalise the results. In respect of the specific concerns raised at the CMA, we continue to believe these do not represent a concern for the use of density modelling per se and we are currently undertaking work to propose a set of acceptance criteria that Ofgem could adopt alongside objective statistical testing procedures, for example, to assess ‘over-fitting’.

Should a model pass the tests of criteria we believe it should be considered as a complementary model to be combined with a model which solely use pre-modelling adjustments to account for regional factors.

GDQ58. What are your views on the approach to company-specific factors for RIIO-GD3?

Company-specific factors have a key role to play in Ofgem’s assessment, as should any exogenous cost drivers not be accounted for by exclusions or regional factors (be that via pre-modelling adjustments or via density modelling), but still serve to impact costs and not be correlated with variables within Ofgem’s models, there will still be omitted variable bias present. As such, similar to omission of relevant regional factors, should company-specific factors not captured serve to increase costs this will understate the efficiency of particular networks and lead to underfunding.

Following the RIIO-GD2 draft determination, we submitted nine company-specific claims to Ofgem related to the unique characteristics of operating within the London environment, but also a further claim capturing complexities of operating our Eastern network. At final determination we received partial adjustments for only three of these (relating to emergency job times, repex reinstatement and repex plant hire) for London as well as the single claim for Eastern (reduced depth of cover). Given this, and the resulting gap between the estimated benchmarked efficiency of London and our networks resulting from Ofgem’s regression analysis, we appealed Ofgem’s final determinations in this regard.

Whilst ultimately the CMA ruled that Ofgem had not erred in its treatment of London cost conditions when assessing Cadent’s appeal, it did recognise that our company-specific factor claims were more relevant than Ofgem’s chosen adjustments, where these were made. Furthermore, the CMA’s decision must be cast in relation to the specific legal standard being assessed and should not be interpreted as a conclusion that there is no scope for improvement in the way company-specific factors are assessed and included in cost assessment moving forward.

We remain of the view that there is scope to materially improve the recognition of company-specific factors within GDN cost assessment and we were encouraged to see greater acceptance of London factor claims at RIIO-ED2 for UK Power Networks for their equivalent electricity distribution network(s). We are currently undertaking a significant programme of work to build on the lessons from RIIO-GD2

³⁸ Schweter and Wetzel (2017), “Scale and scope of economies of German electricity and gas distribution networks”, ENERGIO Working Paper, Nr. 9, Table 4. ; Filippini, Hrovatin and Zoric (2004), “Efficiency and regulation of the Slovenian electricity distribution companies”, Energy Policy 32 (2004), p. 335-344.

price control and our CMA appeal to develop robust evidence for consideration by Ofgem for RIIO-GD3. Key areas where we are endeavouring to improve our evidence includes seeking to:

- **compare differential costs incurred across as many networks as possible**, rather than just a single comparator (unless absolutely necessary due to data). In some cases where data is available across all Cadent and non-Cadent GDNs we will seek to utilise this. However, in many cases due to the detail of data required and lack of reporting (e.g., via RRP or otherwise) to evidence and value claims necessitates comparison of costs only between Cadent networks.
- **utilise a greater variety of data, both from external and internal sources**. Following Ofgem's approaches to regional labour and reinstatement adjustments, where possible we are seeking to draw on external evidence to explain and/or value regional factor claims. However, in many cases elements of our submission will still rely on our own cost data as relevant and specific external data is not always available. It is important that Ofgem recognise the need to utilise internal data for claims and judge each claim on its merits and not mechanistically reject claims for using this type of data. Such a position is not only unsustainable as the majority of our works are contracted out to third-parties, but also inconsistent with Ofgem's own regional factor adjustments which themselves are based on this type of data (e.g., urbanity productivity).
- **build on precedent from RIIO-ED2**. We note the approach taken by UK Power Networks in developing their company-specific factors submission for the RIIO-ED2 price control and Ofgem's approval of the majority of claims in their totality. In developing our evidence for RIIO-GD3 we are looking to develop our work in a similar way to their evidence, where possible, so that we can ensure factors relevant across both sectors are consistently recognised and where sectoral differences apply, we can clearly set these out in our work.

We will present updated and new evidence on company-specific factors facing our networks as part of our RIIO-GD3 business plan submission.

GDQ59. In your view, which cost areas will require separate technical assessment in RIIO-GD3?

Costs excluded from comparative regression analysis can be assessed in one of two broad ways:

1. Non-regression analysis – this approach still involves an element of modelling and quantitative analysis, but given it is applied to costs that have been excluded from comparative regression analysis, it often involves comparison of business plan costs to historical costs incurred by a network to deliver an activity.
2. Technical Assessment – this approach can involve a variety of approaches, but largely under the umbrella of an expert qualitative and quantitative review of a specific project or cost area. It is often necessary when it is not robust way to assess costs based on historic comparators or when a non-regression approach is unable to capture required cost drivers that can only be assessed qualitatively.

We believe that in determining the approach used to assess costs technically rather than via a non-regression assessment this should be based on which is likely to give a more robust outcome. In principle we believe Technical Assessment is likely to be most appropriate when assessing cost areas that have one or several of the characteristics below:

1. costs incurred in the business plan **vary significantly to historically incurred costs** for a given activity and **cannot be modelled by any quantitatively defined cost driver** (such as costs needed to meet particular qualitatively defined standards, e.g., Cyber Security);
2. **costs to be incurred are new** for the upcoming period (for example, new bespoke outputs) that have not been incurred in previous periods;

3. costs which are **discrete and sporadic** in nature (for example, large and atypical capital projects);
4. costs which have a high degree of **uncertainty with respect to scope or size** (for example, third-party driven work such as LTS Rechargeable Diversions); and/or
5. costs to be incurred which are **highly unique in nature** and which cannot be modelled limiting the scope for comparison (for example, atypical capex and repex works in certain locations)

These align to characteristics of cost areas technically assessed at RIIO-GD2 and noted in Ofgem's SSMC GD Annex.

In our response to GDQ55 we set out areas of the cost base which we believe may require separate assessment of costs (be it Technical Assessment or non-regression) at RIIO-GD3. Of these, based on RIIO-GD2 approaches we would expect the following to be assessed via Technical Assessment:

- Bespoke Outputs
- Large and atypical projects (and related opex – see our response in GDQ55 in the case of LTS Rechargeable Diversion surveys work)
- Cyber Security
- Physical Security

To not technically assess these costs in RIIO-GD3 we believe there needs to be a significant change in the nature of the costs so that they do not have the characteristics set out above and so they would warrant reconsideration for a non-regression or regression assessment. We are unaware of material changes in the nature of these that would lead this conclusion. We therefore believe that they should continue to be Technically Assessed.

As discussed in GDQ55, we also believe that other LTS Diversions (i.e. non-rechargeable and remaining smaller rechargeable diversions) could be considered for exclusion from regression analysis as we believe there is currently no current driver able to account for cost differences across GDNs within Ofgem's regression model for this cost category. Should this be appropriate, they will then need to be assessed and could be under either technical or non-regression approaches to be determined by application of the criteria above.

In addition to consideration of what cost areas it could be appropriate to conduct technical Assessment on at RIIO-GD3 it is also important to recognise that in some cases whilst the needs case for expenditure may be clear the ability assess costs ex-ante may be difficult. In such circumstances it is therefore important to consider whether other mechanisms such as UIOLI allowances and/or uncertainty mechanisms could be used to provide funding networks require in a different way.

As examples, in line with our responses above we believe:

- A re-opener uncertainty mechanism will be needed in the case of excluded costs for Loss of Land Development claims (and related costs) which are an alternative means to achieving the same outputs as pipeline diversions, but are uncertain to predict or quantify ex-ante; and
- UIOLI funding approaches for excluded costs to support Vulnerability and Carbon Monoxide Awareness (for costs remaining outside of baseline allowances) and Net Zero and Re-opener Development work will be needed to provide funding for these activities more flexibly than an ex-ante assessment is able fully achieve.

GDQ60. What are your views on alternative technical assessment approaches for RIIO-GD3?

By their nature, Technically Assessed costs are difficult to benchmark quantitatively, either by being incomparable across GDNs (meaning comparative regression analysis is not robust) and/or costs having characteristics that make non-regression assessment practically inaccurate or impossible. For example, if costs are new, discrete and sporadic, or vary significantly to those incurred historically, cannot be modelled by a quantitatively defined driver, uncertain or highly bespoke. Given this there remain only a small number of types of approaches that can be implemented.

There is often little alternative to assess costs was expert/engineering qualitative and quantitative review of costs. Indeed, this was used as the primary method of Technical Assessment at RIIO-GD2. However, there can often be a lack of transparency for why specific decisions have been made on specific categories of spend – whether on efficiency and/or workload. We would therefore encourage Ofgem when undertaking expert/engineering reviews to work collaboratively with GDNs to ensure the process at arriving at decisions is clear and so that opportunities are given to provide additional analysis where appropriate to inform assessments.

GDQ61. In your view, which cost areas will require separate non-regression analysis and benchmarking in RIIO-GD3?

In our responses to GDQs 55 and 59 we set out our views on areas of our cost base which we believe will likely require separate assessment to core comparative regression analysis and the principles we would expect to be applied to determine whether costs should be assessed via Technical Assessment or Non-regression approaches. Based on these responses there are several categories of cost which we believe will require Non-regression assessment at RIIO-GD3. Specifically, in the case of Cadent:

- Streetworks
- MOBs (ensuring all relevant cost categories with related activities are removed)
- Repex Diversions
- Smart Metering Costs
- Land Remediation

All of these areas were assessed via Non-Regression assessment at RIIO-GD2. Similar to our views on Technically Assessed cost areas, we also believe that to not adopt a Non-regression assessment at RIIO-GD3 for these would require clear justification of a change in the nature of costs so that they could be assessed via comparative regression analysis and/or Technical Assessment. For these categories, we are unaware of material changes in the nature of these that would lead this conclusion. We therefore believe that they should continue to be assessed on a Non-Regression basis.

Whilst we believe that the use of Non-Regression approaches remains valid for these cost categories, we believe that evolution of the precise approaches to undertake this type of assessment is needed for GD3. Particular examples are set out below.

Evolving the assessment of Streetworks Costs

One area we are particularly keen to engage on are the assessment of Streetworks costs. Streetworks costs relate to expenditure incurred by GDNs to enable the delivery of opex, capex and repex related activities whilst complying with the conditions of undertaking work in public spaces. For example, permitry costs, the provision and use of traffic management equipment and the compliance with Lane

Rental schemes. These costs have historically and still do impact GDNs to differing extents for three reasons:

- differences in levels of underlying GDN activity which require streetworks costs to be incurred;
- differences in the type and coverage of streetworks schemes and restrictions to be complied with and the propensity for use and charging for these by Local Authorities/Highway Authorities; and
- differences in the costs of permits and charges across different regions.

Based on the inability to capture exogenous drivers of cost across these areas these costs have historically been excluded from comparative regression analysis – which we support continuing for RIIO-GD3 – and have been assessed by non-regression assessment.

Over the RIIO-GD2 period we have seen significant increases in costs driven by the increased number of schemes in place across all our networks with many local authorities introducing new ones over the period. Alongside this, where schemes have been put in place we have also seen greater propensity for charging as well as increased levels of charging by Local Authorities/Highway as they mature their operational approaches of managing schemes. As an example in some areas, existing schemes have expanded the coverage of schemes over all road types, rather than being targeted in certain areas. What this means is that to deliver a set amount of activity (e.g., kms of mains replacement work), there are now significantly more costs to enable this than in previous periods. We only expect this to continue into RIIO-GD3.

At RIIO-GD2 Ofgem set allowances for Streetworks costs by providing funding for the ten-year annual average of costs between 2016/17 and 2025/26. This average was calculated without any reference to workloads or other major scale variables such as forecast permit numbers. We continue to support the assessment of costs at a GDN-specific level so that GDNs are not unfairly penalised for systematic differences in the coverage of and use and fees payable for streetworks schemes across their operating areas. However, by setting allowances based on a long-term historical average this assumes:

- underlying workload volumes are fixed; and
- costs incurred per unit of activity (and by construction per permit) are fixed.

As set out above, we do not believe these are true in the RIIO-GD2 period nor for RIIO-GD3 relative to previous periods.

At RIIO-ED2, we believe, Ofgem constructively built on its approach by setting allowances relative to a more recent base timeframe (2019-2021) and using an underlying GDN activity driver to assess costs. However, this continued to not fully account for growth in the number of Streetworks schemes and use of permitry. It also does not consider any increase in permit fees within the upcoming price control for delivery of a given unit of activity. Given this, and as streetworks costs are likely to be a larger issue for GDNs than DNOs (for example, as due to the presence of the IMRRP, GDNs need to undertake a greater proportion of their work in the carriageway, rather than pavements compared to DNOs – which requires permitry, lane rental etc) continued evolution is needed at RIIO-GD3. Key areas where we think the approach could be improved on include:

- using the most recent and potentially forecast data on costs to provide a more representative unit cost of activity (and by construction the associated permitry costs);
- accounting for drivers of Streetworks costs in addition to underlying GDN activity drivers to reflect:

- the number of Streetworks schemes used in particular GDNs' operating areas; and
- the greater use of permitry even within areas that have historically operated schemes.

It is important to recognise that, whatever approach is taken, however, may not fully deliver funding required for GDNs due to uncertainty regarding streetworks legislation and cost levels 2026-2031. We therefore support retention of a Streetworks related re-opener mechanism (as set out in our response to GDQ41).

Consideration of the appropriateness of applying the 'catch up' efficiency challenge to Non-regressed costs

In addition to evolving the precise approach Ofgem takes to assess specific categories of costs, we also feel strongly that Ofgem must reconsider the blanket application of 'catch up efficiency' challenge estimated from comparative regression analysis to non-regression items when setting allowances. Firstly, as the very rationale for excluding costs from a regression assessment is that they are not comparable across GDNs. As such, it is then inconsistent to apply a challenge on these costs generated from such an assessment as it could unfairly penalise networks who incur high costs in these areas that are out of their control with a harsher efficiency challenge than they should have and unfairly reward others for the opposite reasons. Secondly, as in some cases the non-regression assessment itself has already 'in-built' a level of efficiency challenge meaning that application of catch up on top of this 'double-counts' any efficiency challenge. For example, based on the approach Ofgem used to assess Streetworks costs at RIIO-GD2 as this assumed workload and permit volumes were fixed, and as they were in reality expected to increase, this embedded an efficiency challenge for GDNs. Application of a catch-up challenge to this therefore double-counted the challenge. Instead, we believe Ofgem should adopt the same approach as to Technically Assessed items and not apply the catch-up efficiency challenge to non-regressed costs.

GDQ62. Which separately assessed cost activities from RIIO-GD2 could potentially be included in totex benchmarking in RIIO-GD3?

In our response to GDQ55 we set out our views on the criteria we believe should be applied to determine cost exclusions at RIIO-GD3. We also set out the results of preliminary qualitative analysis we have undertaken to apply that criteria to our GD3 cost base. Based on this we have suggested additional cost areas which may be considered for exclusion from regression analysis. In addition, we listed several areas we felt could be considered for including within totex benchmarking for RIIO-GD3. Below we explain our rationale for why these should be considered for potential inclusion.

Growth Governors

In our response to GDQ55 we highlighted that where an exclusion is made there needs to be consideration given to whether there are other activities that could be undertaken to deliver the same output. Where this the case those costs must also be excluded from the regression analysis or the costs proposed to be excluded should be included. At RIIO-GD2 we consistently argued that this applied in the case of Growth Governors. Growth governors support the reinforcement of the network, but the reinforcement of a network can also be achieved through longer and/or bigger pipe kay which is included within the regression and modelled via the reinforcement synthetic cost driver. As such, under the current framework we believe this bias' the regression assessment by overstating the efficiency of networks who predominantly use Growth governors and understate the efficiency of those

who use pipe lay solutions. As such, we believe this should be considered for inclusion in GD3 regression analysis, with additions to the reinforcement synthetic cost driver to account for variation in costs between GDNs.

Electric/zero-emission vehicle costs

At RIIO-GD2 Ofgem asked GDNs to submit a separate submission for the price control related to the incremental costs of purchasing and using electric and zero-emission vehicles. This was then used to formulate the Commercial Fleet PCD to incentivise and provide distinct funding for GDNs to convert their existing fleet. However, the existing costs of traditional ICE vehicles were included within totex and assessed via comparative regression assessment. In accordance with removing the Commercial Fleet PCD for the incremental cost of electric and zero emission vehicles and funding these through baseline allowances at RIIO-GD3 we therefore believe, like other vehicle costs, these should be considered for inclusion within the regression assessment. This will also support greater consistency in assessing comparative fleet costs between GDNs as a totex model will be robust to different procurement approaches. For example, leasing which leads to opex or buying vehicles which is included in capex. However, given the difference in delivery against the commercial PCD within RIIO-GD2 across networks (see our response to GDQ8), it is important that significant consideration is given to the consequential impacts of the use of a greater proportion of electric vehicles by some networks to ensure inclusion within regressed costs does not unduly disadvantage particular networks who have invested heavily in this area in line with the PCD.

Non-atypical large projects

As set out in our response to GDQ55, based on review of GD2 exclusions made for large and atypical capex we believe that in some cases whilst investments may have been large, not all appear atypical or specific to a given network. As such at RIIO-GD3, rather than suggesting a category of spend to be considered for inclusion in totex regression analysis we think what is needed in respect of large projects (capex, repex and related costs) is greater consistency in their exclusion across networks. In particular to ensure projects put forward are atypical and if not, costs should be included within totex for regression analysis.

As noted in our responses to other questions, however, these are only preliminary thoughts and based on qualitative analysis and lessons learnt from RIIO-GD2. It is important that any exclusions or inclusions are arrived at in a transparent and collaborative manner using CAWGs to discuss and inform final decisions throughout the process.

GDQ63. What are your views on retaining the RIIO-GD2 pass-through cost items for RIIO-GD3?

Pass-through is an important mechanism that allows for allowances to vary for cost areas which GDNs have limited or no control over. We support retaining pass-through treatment of costs for the items covered in the RIIO-GD2 control and we think a further cost item that should be considered for pass-through treatment for RIIO-GD3 and onwards are costs associated with the Joint Office of Gas Transporters (JO).

The JO plays a key role as the Administrator of the Uniform Network Code (UNC) on behalf of Gas Transporters and has been funded for this activity within our Totex allowances. It is however likely to undergo significant change in the activities it undertakes as part of Ofgem's Code Governance Review. The Code Governance Review is introducing the role of Licenced Code Managers in the process which the JO could either take on itself, or see the Code Administration role taken away to the

new Licencee. There is also a possibility that the Code Administration role could change with more or less duties, as part of the journey to a new Code Manager.

Depending whether the JO sees its duties change this could mean costs imposed on the Gas Networks could increase or decrease significantly – out of the control of the networks. The smooth journey to a new Code Manager is necessary to support Government and Ofgem's ambitions and therefore flexible funding should be provided to ensure work is not constrained by lack of funds, or to avoid an unjustified windfall for the gas networks. As such we would encourage Ofgem to consider these costs for exclusion from controllable totex and to receive pass-through cost treatment moving forward.

GDQ64. What are your views on suitable approaches to the disaggregation of totex allowances for RIIO-GD3?

Irrespective of the precise level of aggregation used by Ofgem at RIIO-GD3, assuming the majority of costs are assessed via comparative regression assessment there are two broad ways to disaggregate totex allowances for monitoring and the development of PCD and UM parameters.

The first approach is that currently used by Ofgem, and is necessitated by a 'totex-only' comparative assessment where Ofgem uses proportions in company business plans to carve up totex allowances in line with plans. This has the advantage of being consistent with how GDNs allocate their costs on a network by network basis. However, where there are allocation differences between GDNs it has the disadvantage of meaning cross-network comparison of allowance levels or PCDs parameters is difficult and potentially unreliable. It also has the disadvantage for the setting of volume drivers to not be able to distinguish between fixed and variable costs meaning unit costs used may be higher than necessary. This latter point can be overcome though through engagement with GDNs to understand proportions of fixed costs across networks and to remove fixed costs from unit costs. This has been the approach taken in RIIO-GD2 in relation to connections volume drivers.

The second approach that could be utilised would build on the use of robust bottom-up cost models whereby these could be used in combination with the suite of models to set overall totex models to both (i) split allowances into different categories and (ii) help to ensure unit costs in volume drivers are only based on variable costs (as regression analysis allows for identification of fixed costs). However, to operationalise this approach Ofgem would need both (i) bottom-up cost models covering each of the areas where they seek to disaggregate costs and (ii) each of these to be as robust as other models used to set cost allowances (e.g., totex models. Based on our experience at previous price controls neither of these two criteria are likely to be fulfilled.

Given this we would support continued use of the current approach to allowance disaggregation, with two key comments:

- in RIIO-GD2 we are yet to fully finalise totex disaggregation and we are about to complete year 3 of a 5 year control. As such, we would support a more concerted effort to work with Ofgem as part of finalising the RIIO-GD3 process with companies to implement and agree this upfront to avoid the elongation of the process and the difficulties this creates (for example, staff turnover delaying implementation and creating confusion throughout the process)
- the RIIO regime operates on a totex basis, apart from specific PCDs. In a constantly changing operational environment and one where company and broader accounting policies change over time, inevitably this means throughout the course of a control there are variances between disaggregated allowances and actual spend which are not related to performance. It is

important Ofgem are conscious of this when monitoring performance reporting and so treat reporting against disaggregated allowances where not related to a PCD proportionately.

Proposals for Business Plan Data Templates (BPDTs)

Key Message:

We agree with the intent to eliminate areas of inconsistent reporting as this will ensure that any benchmarking of performance is on a fair and equitable basis, and would support the aim of reducing regulatory burden. In some instances this may be resolved through the current annual RIGs consultation, but where this is not possible then it will be important that inconsistencies are resolved in time for the start of RIIO-GD3. We have identified streetworks productivity costs, riser counts and “clock stopping” for unplanned interruptions as examples where consistency needs improving.

In addition, through the transition from RIIO-GD1 to RIIO-GD2 we have seen a significant increase in regulatory burden due to the volume and granularity of data required and increased number of “associated documents”. As such the development of the BPDTs should be seen as an opportunity to rationalise data requirements and any supporting guidance to ensure that it is proportionate and of value for customers.

GDQ65. In your view what are the high-priority areas of reporting inconsistency between GDNs within the RIIO-GD2 BPDTs and RRP, and how can these be addressed for RIIO-GD3?

We agree that eliminating inconsistencies in reporting through business plan data tables and the RRP should be a priority for RIIO-GD3, in addition to simplifying and streamlining reporting requirements. Through the RIIO-GD2 RRP process it has become apparent that there are inconsistencies across GDNs and with cost reporting used for RIIO-GD2 cost assessment which will be important to rectify for RIIO-GD3.

Three key areas we have identified to date are:

- **Streetworks productivity costs** – The streetworks costs reported within RRP Table 4.12 in RIIO-GD2 RRP do not currently explicitly allow for inclusion of costs related to the productivity impact of streetworks restrictions and permit conditions for Cadent networks. These costs are included within totex reported in RRP, but they are not singled out as being attributable to streetworks and it is important that they are visible because they are assessed separately as part of the price control. These costs were previously reported within all years of RIIO-GD1 RRP (Table 3.13) and were within the definition of streetworks costs ultimately used at the RIIO-GD2 Price Control review (and reported in Business Plan Data Tables) to set allowances. It is important that costs related to the productivity impact of streetworks restrictions and permit conditions are included within tables in RIIO-GD3 as a separate line item so that they can be removed for efficiency benchmarking purposes. We are currently working with Ofgem to seek to have these costs reported for Year 3 onwards in RIIO-GD2 RRP, and will need to include them in BPDTs for all years within the dataset.
- **Riser population counts** – In reviewing the RIIO-GD2 approach to cost assessment we have noticed a significant variance for some networks between riser counts used within RIIO-GD2 cost models (as part of the calculation of MEAV) and those being reported in RRP for RIIO-GD2 within period. This is shown in the figure below. We understand there will be variances from year-to-year due to improvements in data and potentially dynamic growth. However, the differences shown below are material and could distort outcomes as they feed into comparative

regression assessment. We are keen to work with Ofgem and other GDNs to resolve this issue through RIIO-GD3 Cost Assessment Working Groups.

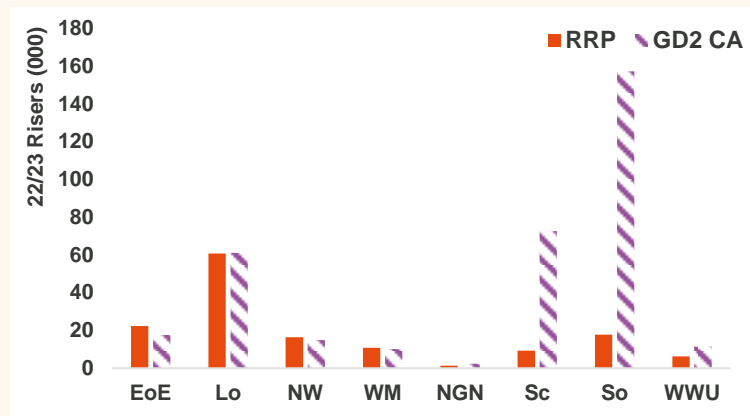


Figure GDQ65.1: comparison of GDN riser counts

- Unplanned Interruptions** – We have identified a disconnect with the RIGs definitions for “clock stopping” & “not stopping” for unplanned interruptions associated with third-party delays, particularly for customer-driven delays where there are physical site access issues. We would welcome clarity on what scenarios Ofgem envisage the clock can be stopped and where not. Through the RIIO-2 Year 3 RIGs consultation discussions with GDNs and Ofgem, we have suggested that these types of scenarios are all included in the “clock stopping” category since they occur in situations that are out of our control. However, if this is not resolved through this process, it should be resolved as part of future BPDT working groups for RIIO-GD3 .

In all of the examples described above it will be important to gain clarity on the reporting requirements as this will drive consistency across networks and ensure that any benchmarking of performance is on a fair and equitable basis.

More generally, Ofgem should be mindful of not creating risks for new inconsistencies in RIIO-3. The data tables are being developed through the Cost Assessment Working Group. Ofgem should be careful and pragmatic where it requires a more granular level of detail on costs. If the level of granularity required is greater than our systems are able to capture, it will require the application of more allocations. Given GDNS use different operating models, it is likely to generate new inconsistencies across GDNs.

GDQ66. We invite views on current reporting requirements and reporting structure at the cost activity level and how this may be adapted to better suit RIIO-GD3 and related development of BPDTs.

In the current price control we have welcomed the collaborative nature of engagement between Ofgem and GDNs in the overall cost & volume RIGs process. It should continue as it helps to ensure the framework develops appropriately and supports consistency in reporting across GDNs. However, it should be recognised that the level of regulatory reporting and monitoring that Ofgem undertakes across all company activities has increased significantly between RIIO-1 and RIIO-2 (as shown in Figure GDQ66.1) and should be a focus area for development of RIIO-GD3 to ensure that it is proportionate and of value for customers.

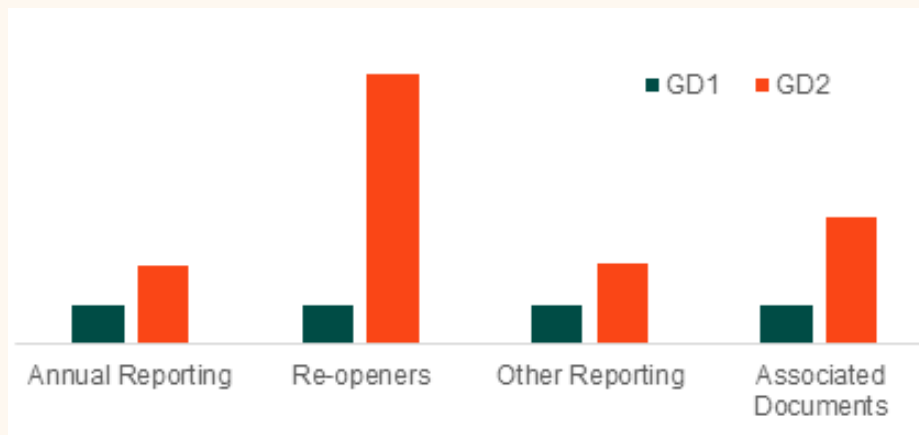


Figure GDQ66.1: Increase in regulatory reporting in RIIO-GD2, compared to RIIO-GD1 (relative increase in documents)

The overall intent of the framework is to be consistent with the Final Determinations and to enable Ofgem to collect the information needed to assess GDNs performance in relation to the Special Conditions of the Licence relating to the price control, including:

- monitoring the performance of GDNs against final proposals;
- monitoring compliance with price control obligations; and
- allowing analysis between price controls and at the subsequent price control review.

Now is an opportunity to critically assess which reports are essential to be provided under the regulatory reporting process and to identify opportunities to reduce the level of granularity and streamline the requirements, for example to avoid duplication, and to consider what could be left to other normal business reporting. In line with this, we make the following observations and suggestions:

- **The level of granularity requested can be disproportionate given the RIIO framework is a totex-based regime** - i.e., totex performance is based upon the sum of capex, opex and repex. It should not matter too much where costs are incurred provided totex overall remains within the allowance and there is no detriment to customers. Therefore, the cost reporting requirements should be flexible enough to allow costs to move between activity levels without the need to report each movement in detail.
- **There are opportunities to reduce duplication or consolidate across reporting requirements** – One example is environmental and sustainability reporting. We produce an annual sustainability report which brings to life our sustainability and environmental commitments, but in addition there are portions of the annual environmental submission information that are contained within the annual Cost and Volume Regulatory Reporting Packs for example shrinkage, business carbon footprint and biomethane connections data. We should seek to consolidate reporting so that there is only a requirement to report once. Another example is the safety worksheet which contains data items that we already report to the HSE. We do not see a reason to duplicate these in the annual RRP return to Ofgem.
- **Unnecessary “legacy” reporting from RIIO-GD1 should be removed** - Reporting of some RIIO-GD1 outputs have been retained for RIIO-GD2 whereas, in the sector specific methodology decision document, Ofgem had stated they would be removed either because the output had been replaced with a new regulatory mechanism, or because it was deemed that the output had limited value in RIIO-GD2. Examples include Repex Length decommissioned – Risk removed and Repair Risk, fractures & corrosion, and planned interruptions.
- **Unnecessary reporting from RIIO-GD2 should be removed** – As part of the annual regulatory report submission there is a requirement to include data relating to the Cadent Foundation community funding. We already publish an annual report highlighting the work we have done to

support our communities. Since there are no outputs associated with this, we do not see the need for extra reporting through RRP.

We recognise that Ofgem may want other data for purposes outside of the RIGs intent. We suggest that Ofgem considers placing a requirement upon GDNs to maintain the data so that it is available if or when it is required. This approach would mitigate significant cost and burden increases associated with collating and assuring this data through the RRP process.

In addition to the points raised above, **we have concerns regarding the volume of data required for RIIO-3, particularly for the draft BPDTs in the following areas:**

- The SSMC outlines the proposal for the requirement to report 11 years of historic data (RIIO-GD1 plus Years 1-3 RIIO-G2), 7 years forecast (years 4/5 RIIO-GD2 & RIIO-GD3), in 2023/24 price base. This will impose significant burden upon our resources not only to complete the price base conversion but also as the year 3 cost & volume RRP will be due at the same time. We therefore propose that the provision of RIIO-GD1 historic data is targeted to those data tables in the draft BPDTs where it is of greatest value, will provide sufficient information to enable Ofgem to make final decisions and can also be used to test the template. We suggest the summary tables meet these criteria for example. The outcome of this would drive any developments/enhancements needed for the final tables later in the year.
- A series of complex data tables have recently been published via the working group and whilst we appreciate these are under development, the volume of data that networks will be required to collate will introduce further regulatory burden for Ofgem and networks, especially if the existing PCD reporting requirements remain going forward as these will be due on the same timeline. We appreciate that this is a key focus area and that Ofgem will want to understand network performance, but the reporting should be proportionate and useful for the intended purpose.
- We have not yet seen the NARM business plan data tables, but these should also be subject to the same considerations of proportionality and usefulness.