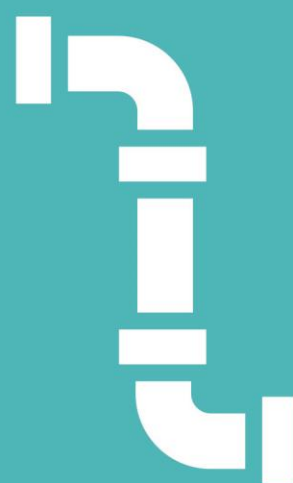




RIIO GD1 NETWORK OUTPUT MEASURES CLOSE OUT REPORT



July 2021

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This is the close out report for the Network Output Measures (NOM's) GD1 Incentive Methodology submission



1 Executive summary

During RIIO-GD1, GDNs, under the guidance of Ofgem, developed a number of risk models which assess the baseline risk (zero or minimum intervention scenarios) associated with 6 key asset groups. These models express risk in a monetary form.

The benefits of proposed investment plans (or interventions) are then applied against this baseline risk profile, and an assessment of deterioration, to forecast the long-term change in monetised risk. The forecast and actual monetised risk changes are shown in this NOM's closeout data template and explained in this RIIO-GD1 close out report. This report will explain in detail

1. Assessment of delivery/achievement of those targets
2. Justification for risk trading across asset groups.

In summary, we committed to a target of a risk delta of R£49.4m. This is the difference from a forecast 'without intervention' position at end RIIO-1 of R£217.9m to a forecast 'with intervention' position of R£168.6m.

We delivered a risk delta of R£50.6m, overachieving our target by R£1.2m. This has been achieved through a balanced intervention programme, combining refurbishment and replacement, justified using an assessment of lowest whole life cost. This strategy of asset life extension has ensured we delivered our commitments for asset health and risk whilst driving efficiencies in costs. This strategy continues into RIIO-2, with no increase in Capex on NARMS assets, thus continuing to deliver the RIIO-1 efficiencies through the next price control.



2 Asset definitions and intervention definitions

A common suite of Asset Groups to be used as a basis for risk assessment and reporting has been developed and agreed between all GDNs. These are defined based upon the key operational components within the gas supply system.

The Asset Groups are consolidated within Event Tree analysis by assessing which assets:

- Provide a similar function/purpose;
- Have similar Failure Modes;
- Have a similar Probability of Consequences (PoC); and
- Have a material effect on the investment plans being proposed.

For example, District, Industrial/Commercial and Service Governors will be considered within the same analysis but separated out for reporting purposes. There are 6 primary Asset Groups, for which Event Trees will be developed, as per Table 1 below. Eight Risk Maps will be developed for the primary asset types, with Offtakes and PRS having three separate risk maps for Odorant and Metering, Pre-heating and Filters and Pressure Control.

Table 1 – Asset groups used in NOMs

Primary Assets for Event Tree Analysis	Risk Map Level	Reporting Asset	Secondary Asset
A - Mains	Asset Level	Iron	
		PE	
		Steel	
		Other	
B - Services	Asset Level	Asset level	
C- Governors	Asset Level	District	
		I&C	
		Service	
D – LTS Pipelines	Asset Level	Piggable	
		Non-Piggable	



E – Offtakes & PRS	Odorant & Metering	Offtake Metering System
		Offtake Odourisation System
	Pre-heating	Offtake Preheating
		PRS Pre-Heating
	Filters and Pressure Control	Offtake Filters
		Slam Shut & Regulators
		PRS Filters
		PRS Slam Shut & Regulators
F - Risers	Asset Level	Asset Level

The asset data is taken from our asset repository. Fault and failure data is associated with individual assets in our systems so is readily available to support the asset risk calculations

For most asset groups, we have locked down the base data since the validation and rebasing exercises, concluded in the period 2017-2019. This decision has been made based on the following logic and reasoning

- No significant change to asset populations and asset condition assessments since NOM's development, validation and rebasing as this happened very late in the RIIO-1 period
- We needed time to bed in the newly developed models and ensure competence and understanding before applying significant updates and changes
- Most intervention work was locked down and planned in prior to the completion of the NOM's rebasing exercise in 2019.

Mains and service's data were the exception. There are the asset base's most likely to change through our error correction process (DR4) and through new assets as a result of growth and new connections. For this reason, we have updated the mains and services data sets annually. These updates are quantified in the NOM's closeout data template.



3 General assumptions

There have been no further general assumptions above those in the NOM's methodology required to populate the closeout template

4 RIIO-GD1 Targets

The data populated in table 3.1 and 3.1.1 is based on the rebasing exercise carried out in 2018/19. As part of this exercise, we submitted asset data and intervention volumes used to calculate the 2013 base risk position, the 2021 without intervention risk and 2021 with intervention risk. The intervention data was the workload allowed in Ofgem's GD1 Final proposals.

Ofgem carried out a rigorous analysis of the submission at the time to ensure it gave targets as equally challenging as the original health and risk indices targets, as set out in GD1 Final proposals. Ofgem's assessment was followed by a consultation process and the result was acceptance of the asset populations, intervention volumes and types, monetised risk values and delta risk targets for GD1.

Due to the robustness and recency of this assessment, we have no reason to change these numbers so the tables remain consistent with the tables agreed through this rebasing process.

As part of the NOMs methodology sign-off, the GDNs submitted a set of common values to underpin the NOMs modelling. These included things such as cost of carbon and value of a gas interruption to a consumer. These were named 'global values' and are documented in the Network Output Measures Health & Risk Reporting Methodology & Framework. These have not been updated since the sign-off of the methodology and the subsequent validation and rebasing exercises.

They are detailed in table 2 below.



Table 2 - Global values in 2014/15 prices

Sens	Node ID / Variable	Description	Value	Notes / Source	GDN or Common value
H	F_Loss_Of_Gas	Cost per m3 of loss of gas	£0.22	2p/kWh = £0.22/m3 (QUARTERLY ENERGY PRICES 2015 DECC)	Common
L	F_Legal_Penalty	Legal penalty payment	£1M	SRWG estimate based on civil action costs.	Common
H	F_Carbon	Cost of carbon	Formula to model bi-linear increase over time. if(Dyear+2015 <= 2030,Dyear+2015-1953,7.3587*(2015+Dyear)-14860)	0.0020461 tonnes carbon per m3 Carbon price based on "Valuation of energy use and greenhouse gas (GHG) emission - Supplementary guidance to the HM Treasury Green Book on Appraisal and Evaluation in Central Government Sept 14" Box 3.4 Non-traded value of Carbon (£/tCo2e) Scaling factor for methane to be included within volume calculation (see Carbon Loss of Gas)	Common
L	F_Com_large	Cost of large commercial supply interruption	GDN specific or £200 per Customer default.	Compensation cost + visit cost based on data from company systems, or (where no data available) default cost based on £100 compensation payment cost + £100 visit cost;	GDN Specific
L	F_Com_small	Cost of small commercial supply interruption	GDN specific or £200 per Customer default.	Compensation cost + visit cost based on data from company systems, or (where no data available) default cost based on £100 compensation payment cost + £100 visit cost;	GDN Specific



Sens	Node ID / Variable	Description	Value	Notes / Source	GDN or Common value
L	F_Complaint or F_Complaint SI	Cost of complaint	GDN specific or £450 per complaint	Complaint cost based on data from company systems, or (where no data available) default cost based on £450 complaint cost;	GDN Specific
L	F_Critical	Cost of critical customer supply interruption	GDN specific or £200 per Customer default.	Compensation cost + visit cost based on data from company systems, or (where no data available) default cost based on £100 compensation payment cost + £100 visit cost;	GDN Specific
M	F_Domestic	Cost of domestic customer supply interruption	GDN specific or £150 per Customer default.	Compensation cost + visit cost based on data from company systems, or (where no data available) default cost based on £50 compensation payment cost + £100 visit cost;	GDN Specific
L	F_Building_damage	Cost of building damage	GDN specific based on regional cost or default £189,000.00	Based on average regional rebuild cost for a property or (where no data available) default national cost of £189,000 (source: BCIS) http://calculator.bcis.co.uk/register/register.aspx the average price of a house	GDN Specific
L	F_Minor	Cost of minor injury	£ 185,000.00	Sum historically agreed based on legacy Business Plan submissions and discussions with Ofgem/HSE	Common
M	F_Death	Cost of death	£16,000,000.00	Sum historically agreed based on legacy Business Plan submissions and discussions with Ofgem/HSE	Common



Sens	Node ID / Variable	Description	Value	Notes / Source	GDN or Common value
	Discount Rate	Financial discount rate	WACC. Real discount rate i.e. net of inflation if costs not inflated. Or discount rate to include inflation if costs are inflated.	Data taken from Company systems	GDN Specific
H	Carbon_ Equivalent	Scalar value for carbon methane uplift	Carbon equivalent = sum (GWP x %mass)	Conversion factor to account for Loss_of_Gas is methane, not carbon. Based on DECC values weighted for the composition of gas supplied into the network. GWP Value agreed with SRWG for non-ignited gas.	GDN Specific
H	Carbon_Loss_Of_Gas	m3 of carbon equivalent from loss of gas	1 m3 of carbon equivalent from Loss of Gas Carbon Loss of Gas = relative density x carbon equivalent.	Value calculated by each GDN based on actual gas composition in the network.	GDN Specific
	Inflation	Annual increase in financial costs	RPI. (Discount rate net of inflation if costs not inflated. Or discount rate to include inflation if costs are inflated.)	Data taken from Company systems	GDN Specific
	Base Price Year	Base Price Year	Current RRP year	Current RRP year	Common



5 RIIO-1 Delivery

Asset volumes

This is identical to tab 3.1.1 for most asset groups. This is due to the population not changing or not changing significantly. The exceptions are mains and services. These are impacted by new connections and customer growth. They are also changed by an error and data improvement process called DR4. The impact of data cleansing is summarised in tab 3.3.1.

As a result, we have included data changes to asset populations for mains and services in these tabs.

Intervention volumes

These differ from 3.1.1 as they are the actual intervention completed in RIIO-GD1 as opposed to the Final Proposal intervention numbers and types. They come from detailed tracking systems as described below. There is a high level of confidence in the data.

If interventions are delivered internally by our direct labour workforce, they will all have associated work orders and reside in our core SAP system. This makes them easily accessible and reportable. We have a data quality team that perform regular checks on data quality and are in contact with our field operatives to resolve any potential data quality issues. In addition, the SAP system has many data validations built in to highlight potential errors before work orders are closed down.

If intervention work is done by contractors, we track the workload using a single project tracking system, managed by our project management office. This tracks start and end dates, work done, costs and scope changes. When work is complete, we operate a snagging process before jobs are signed off.

The risk values in 3.2 and 3.2.1 are generated using the latest asset base data set and applying the interventions on an asset-by-asset basis to ensure that risk removed is asset specific for reporting purposes.



6 Relevant Risk Changes

In summary, we committed to a target risk delta of R£49.4m. this is the difference from a forecast without intervention risk position at end RIIO-GD1 of R£217.9m to a forecast with intervention risk position of R£168.6m.

We delivered a delta of R£50.6m, therefore overachieving our target delta by R£1.2m. This has been achieved through a well-balanced intervention programme combining refurbishment and replacement based on an assessment of lowest whole life cost.

The following sections summarise the performance by primary asset group with a narrative explaining changes to Final Proposals.

Mains

We own and operate a population of 32,760km buried main, transporting gas to our consumers at pressures ranging from 21mbar to 7bar. There are 3 distinct operating pressure tiers; Low Pressure (LP) 21-75mbar, Medium Pressure (MP) 75mbar–2bar and Intermediate Pressure (IP) 2-7bar.

The IP network is subject to the Pressure Systems Safety Regulations 2000 (PSSR) due to operating in excess of 2bar pressure. These assets total 1,577km and are constructed in either steel or polyethylene (PE). As mandated by PSSR, the steel is protected by Cathodic Protection (CP) systems and well maintained. These assets rarely fail, and investment is primarily in maintaining the CP systems in good health.

The MP and LP networks total 31,183km and are a mix of PE, steel and iron. PE is very reliable and rarely fails. The steel and iron however, are at the end of or beyond their expected life and we respond to circa 8,000 leaks per annum from these assets.

A large proportion of our MP and LP iron mains are subject to a replacement programme mandated by the Health & Safety Executive (HSE). This requires all iron mains up to and including 8" in diameter and within 30m of a building to be decommissioned by 2032. This is a 30-year programme and we have delivered it successfully since 2002.

The remaining iron and steel mains are replaced when Cost Benefit Analysis (CBA) demonstrates it is more cost effective to do so than continue to repair. The



emissions from these mains are also the largest contributor to our Business Carbon Footprint (BCF) which is another significant factor in the CBA and any subsequent decision to replace.

Details of planned vs actual interventions and planned vs actual monetised risk performance are detailed in table 3 below.

Table 3 – Main’s intervention performance

	Planned intervention volumes (KMs)	Actual intervention volume (KMs)	Planned delta in Monetised Risk (R£m)	Achieved delta in Monetised Risk (R£m)
Iron	2,929	2,872	14.5	15.4
PE	0	0	-0.2	-0.6
Steel	571	554	4.0	2.6
Other	2	2	0.0	0.0
Total	3,502	3,428	18.2	17.4

It can be seen that there is a variance in workload of circa 2% which is a direct result of Covid. We have slightly underachieved the risk target for mains as a result of this. It should also be noted that these numbers include asset data cleansing as detailed in the non-intervention risk changes section of the close out template. Applying a normalisation to account for this brings the actual closer in line to the target.

Services

We serve circa 2.5m consumers with reliable and safe energy, transported through our network of pipes and pressure management stations. The sections of pipes connecting houses and businesses to the gas network are collectively known as gas services.

They terminate at an Emergency Control Valve (ECV) which is generally situated at the inlet to a consumer’s gas meter. Our network ends at the ECV and we do not own or manage the gas meter.

Services are predominantly constructed in either Polyethylene (PE) or steel. PE services are incredibly reliable, and a leak is extremely rare. We have laid services in PE since the 1970s. Steel services were generally installed prior to this so they



are mostly over 40 years old with many much older. They are at end of their life, and we experience circa 7,000 leaks per annum.

We submit a services management plan to HSE which lays out our approach to investment and our response when services leak. In summary, this is

- Replace steel services when the parent main is replaced. PE services can be transferred to the new main
- Identify service failure 'hotspots' and replace all steel services in that area
- Replace, not repair, steel services if they leak

Details of planned vs actual interventions and planned vs actual monetised risk performance are detailed in table 4 below.

Table 4 – Service's intervention performance

	Planned intervention volumes	Actual intervention volume	Planned delta in Monetised Risk (R£m)	Achieved delta in Monetised Risk (R£m)
Services	201675	134483	9.08	5.54

The intervention volumes and associated reduction in asset risk for services is lower than was planned for RIIO-GD1. This was realised early in the price control and flagged to Ofgem through costs visits and formal correspondence. The two key reasons for the reduced workload are

- Finding more PE and less metallic services than expected on mains replacement work
- Seeing a smaller number of metallic service escapes than forecast due to milder winters than predicted

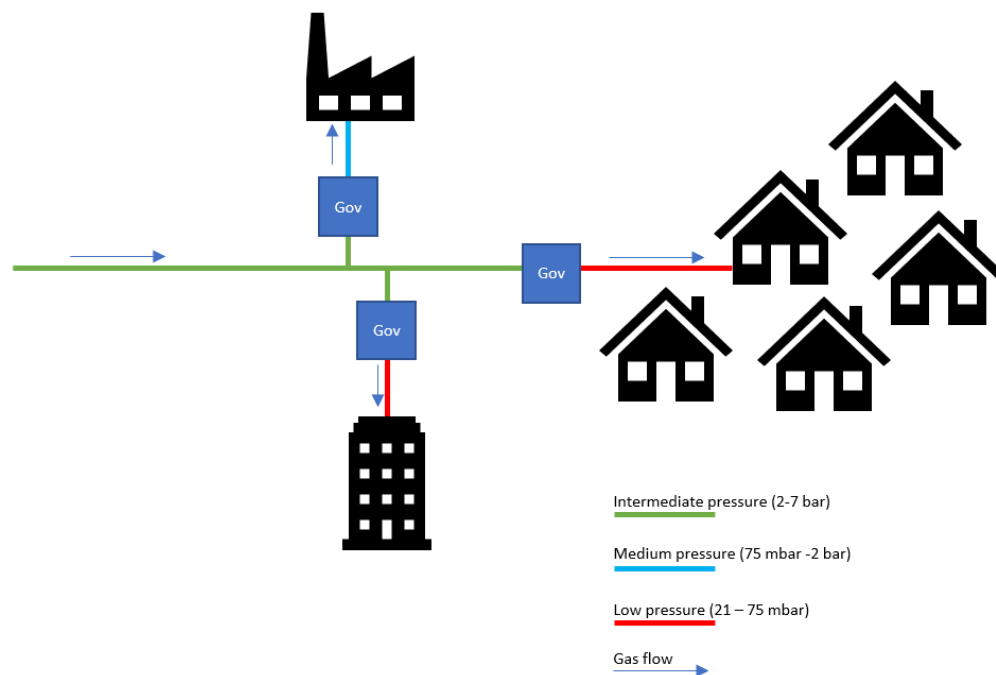
The shortfall in risk reduction in this asset group has been made up for by outperforming targets on our pressure control assets as described later in this document.



Governors

The following diagram illustrates the role of governors (shown as 'Gov') within the overall network:

Figure 1: role of governors in network



Governors take in gas at pressures up to 7 bar and reduce this to either medium pressure or low pressure, for safe operation of appliances for a range of end users.

Summary Data:

- 3 types of governor:
 - District Governors (DGs)
 - Industrial & Commercial Governors (I&Cs)
 - Service Governors (SGs)

	DG	I&C	SG
Purpose	supply multiple properties of different types	supply larger industrial and commercial properties	generally supply up to 10 domestic properties or 1 or 2 smaller commercial properties
Count	2,299	606	14,918
Fewest customers supplied	<100	1	1
Most customers supplied	>52,000	>200	10
Typical Location	On the outskirts of, or inside, towns	Business parks/factories	Less densely populated areas

Details of planned vs actual interventions and planned vs actual monetised risk performance are detailed in table 5 below.

Table 5 – Governor intervention performance

Asset Category	Units	Planned intervention volumes	Actual intervention volume	Planned delta in Monetised Risk (R£m)	Achieved delta in Monetised Risk (R£m)
District Governors	Number of	173	1024	0.11	0.15
I&C Governors	Number of	16	158	0.01	0.01
Service Governors	Number of	5942	2900	0.89	0.45
Total		6131	4082	1.01	0.61

It can be seen, for district and I&C governors we worked on many more sites than planned. This was a result of innovation projects that drove down costs of refurbishment techniques. Whole life cost assessment using the lower cost of refurbishment showed this to be the preferred solution for many sites. As a result, we intervened on many more assets and outperformed the monetised risk target. This approach has rolled forward into RIIO-2 and will continue to deliver lowest whole life cost to consumers.



In contrast, service governor intervention volumes were considerably less than planned at the start of RIIO-1. The forecast for RIIO-1 was supported by an assumption of asset condition based on sample surveys in 2011. We committed to survey all these assets in RIIO-1 and the interventions carried out are a direct result of these surveys and what was identified on site. Our RIIO-2 intervention plan is a continuation of these lower volumes per annum.

LTS Pipelines

There are 2,389km of carbon steel, LTS pipelines across our network, with a maximum operating pressure (MOP) ranging from 7 to 70 bar and diameters from 25mm to 1,219mm. We also own and operate thousands of Cathodic Protection sub-assets that ensure we maintain the integrity of our LTS system.

Details of planned vs actual interventions and planned vs actual monetised risk performance are detailed in table 6 below.

Table 6 – Pipeline intervention performance

Asset Category	Units	Planned intervention volumes	Actual intervention volume	Planned delta in Monetised Risk (R£m)	Achieved delta in Monetised Risk (R£m)
LTS Pipelines - Piggable	Km	1.7	8.7	0.00	0.09
LTS Pipelines - Non Piggable	Km	23.9	57.7	0.07	0.48

Our intervention strategy for pipelines is very much condition assess and intervene early to keep these assets in good health. This is due to the significant consequence of failure. As a result, each intervention has little monetised risk benefit as they keep an asset in good condition, in that good condition.

As can be seen by the intervention volumes, we have worked on a longer length of pipeline in GD2 than plan and slightly overachieved the risk target. This is as a result of responding to results of regular condition and cathodic protection surveys.



Offtakes & PRS

We manage a large asset base of pressure reduction sites known as PRIs (pressure reduction installations), 17 of which are classed as offtakes as they form the interface between the National Transmission System (NTS) and our network. These have inlet gas pressures of between 7 and 70 bar gauge and reduce pressures further to be suitable for use by a range of end users, including large industrial and commercial consumers, as well as domestic households and small businesses.

Using a lowest whole-life cost approach to asset management, and in line with stakeholders' wishes to broadly maintain risk, safety and reliability, as well as the need to remain compliant with key legislation and HSE regulations, a data- and analytics-centric approach was applied to the entire asset base to identify workload requirements for RIIO-GD1. This analysis is supported with spatial analysis tools and AIM (Asset Investment Manager) risk modelling software, which uses the industry leading Gurobi optimisation engine.

Numerous factors are taken into consideration when selecting assets for proactive interventions, some examples being: age and conditions of key components, historical failure rates, system backup, customers supplied, obsolescence, and proximity to people and infrastructure.

Refurbishment is always a preferred option as it provides a lower whole-life cost to an asset by extending its working life. Failure to refurbish an asset at regular intervals leads to much higher deterioration rates in faults and failures and ultimately vastly shortens the working life of the asset. Eventually refurbishment is no longer an option (as key components reach end of life) and the asset requires replacement

Details of planned vs actual interventions and planned vs actual monetised risk performance are detailed in table 7 below.



Table 7 – Offtake / PRI intervention performance

Asset Category	Units	Planned intervention volumes	Actual intervention volume	Planned delta in Monetised Risk (R£m)	Achieved delta in Monetised Risk (R£m)
Offtake Filters	System s	5	8	0.04	0.15
PRS Filters	System s	65	67	5.22	7.46
Offtake Slamshut/ Regulators	System s	6	17	0.04	0.22
PRS Slamshut/ Regulators	System s	101	122	7.37	7.61
Offtake Pre-heating	System s	6	21	0.49	0.82
PRS Pre-heating	System s	101	127	6.92	7.84
Odourisation & Metering	System s	6	17	0.39	1.67
Total		290	379	20.46	25.76

The volumes of assets and subsystems worked on in RIIO-GD1 exceeds the planned number and the monetised risk target has been exceeded. This was a result of innovation projects that drove down costs of refurbishment techniques. Whole life cost assessment using the lower cost of refurbishment showed this to be the preferred solution for many sites. As a result, we intervened on many more assets and outperformed the monetised risk target. This approach has rolled forward into RIIO-GD2 and with continue to deliver lowest whole life cost to consumers.



Risers

Details of planned vs actual interventions and planned vs actual monetised risk performance are detailed in table 8 below.

Table 8 – Riser intervention performance

	Planned intervention volumes	Actual intervention volume	Planned delta in Monetised Risk (R£m)	Achieved delta in Monetised Risk (R£m)
Risers	1486	1380	0.52	0.67

We intervened on slightly less MOB's than planned but we did more assets on higher rise building than forecast in the GD1 plan. This was in response to stakeholder requirements and the outcome of the Grenfell incident. As a result, we slightly over-delivered the risk target for this asset group.

Significant schemes requiring additional commentary

There have been no individual schemes of significant cost and risk impact that require itemising in this report

Methodology Change, CoF Changes and Slower/ Faster Deterioration (GD1)

The NOMs methodology was developed in 2016, validated in 2017 and targets set and agreed in 2018/19. Due to the lateness of this in the price control there have been no methodology changes or COF changes. The data collected since NOMs creation is not a long enough period to give any statistical validity to changing deterioration forecasts, so this has also remained constant in this period

Pre-RIIO-1 work true-up,

This was completed as part of the 2018/19 rebasing exercise so not needed in NOMs closeout.



Asset data cleanse

For most asset groups, we have locked down the base data since the validation and rebasing exercises, concluded in the period 2017-2019. This decision has been made based on the following logic and reasoning

- No significant change to asset populations and asset condition assessments since NOM's development, validation and rebasing as this happened very late in the RIIO-GD1 period
- We needed time to bed in the newly developed models and ensure competence and understanding before applying significant updates and changes
- Most intervention work was locked down and planned in prior to the completion of the NOM's rebasing exercise in 2019.

Mains and service's data were the exception. There are the asset base's most likely to change through our error correction process (DR4) and through new assets as a result of growth and new connections. For this reason, we have updated the mains and services data sets annually. These updates are quantified in the NOM's closeout data template.



7 Methodology for deriving associated costs

7.1 General cost assumptions

The allowances were set on a top down and middle up basis, therefore we have no further detail on allowances other than what's been provided by Ofgem as part of the RIIO-GD1 FDs cost assessment pack.

All allowances to be used for disaggregation will start with the final proposals disaggregated summary provided by Ofgem¹.

All Allowances will be disaggregated on a 2009/10 basis for which the RIIO-GD1 final proposals are stated in. We will then adjust all allowances once reconciled to 2020/21 price basis as per the final year 2020/21 for which close out will be dealt with in.

All actual costs for GD1 will be presented in 2020/21 prices as per the final year RRP report and commentary.

7.2 Section a (Methodology for deriving or allocating, allowances by asset category)

Allowances are already split into a level of asset category as per the disaggregated summary provided by Ofgem (see footnote 1 for reference).

Wales & West		Ofgem Allowance (Post IQ1) £m, 2009-10 prices							
Cost activity	2014	2015	2016	2017	2018	2019	2020	2021	RIIO Total
LTS & Storage	13.8	13.3	11.9	11.4	12.8	11.1	10.3	12.1	96.8
Connections	7.1	7.2	7.3	7.5	7.4	7.6	7.7	7.8	59.7
Mains Reinforcement	7.8	7.8	7.8	7.9	7.9	7.9	7.9	7.9	62.9
Governors	2.3	2.4	2.2	3.1	2.8	2.9	2.7	3.1	21.4
Other Capex	23.0	21.9	16.5	13.7	12.5	12.4	16.1	15.6	131.7
of which IT	7.0	6.7	5.2	5.0	6.0	5.7	5.6	5.0	46.2
of which Vehicles	7.6	6.0	4.2	3.8	1.9	2.2	4.7	4.5	34.9
Total Capex	54.0	52.6	45.8	43.6	43.4	41.9	44.7	46.5	372.6
Total Repex	78.5	78.4	78.7	78.1	79.2	79.1	79.1	77.7	628.8
Work Management	19.1	19.2	21.1	19.9	19.0	20.0	20.3	18.6	157.1
Emergency	13.2	13.1	13.2	13.4	13.3	13.3	13.2	13.7	106.3
Repair	11.6	11.3	11.1	10.9	10.7	10.6	10.4	10.2	87.0
Maintenance	10.4	10.6	10.7	11.0	10.8	10.9	10.7	10.8	85.9
Other Direct Activities	7.2	6.5	7.1	7.4	6.5	6.8	7.0	6.8	55.3
of which Xoserve	4.3	4.1	4.7	5.1	4.2	4.4	4.6	4.5	35.8
Total Direct Opex	61.5	60.6	63.2	62.6	60.4	61.6	61.6	60.1	491.7
Business support	19.0	19.2	19.4	19.9	19.9	20.1	20.2	20.0	157.6
T&A	3.2	3.4	3.7	3.7	3.9	3.8	3.8	3.8	29.4
Total Indirect Opex	22.3	22.6	23.1	23.6	23.9	23.8	24.0	23.8	187.0
Total Opex	84.0	83.5	86.6	86.5	84.6	85.7	85.9	84.2	681.0
Sub-deducts	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	4.8
Total Totex	216.5	214.5	211.1	208.2	207.2	206.8	209.6	208.5	1,682.5
Licence/Network rate/Other	27.6	27.6	27.6	27.6	27.6	27.6	27.6	27.6	220.9
NTS exit costs	23.0	23.1	23.1	23.1	23.1	23.1	23.1	23.1	184.5
Shrinkage	8.9	8.7	8.7	8.5	8.4	8.3	8.1	7.8	67.5
NTS pensions contributions	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	31.6
Total non controllable opex	63.5	107.0	106.9	106.6	106.5	106.3	106.1	105.9	808.8
Total funded costs	280.0	321.5	318.0	314.9	313.7	313.1	315.8	314.4	2,491.3

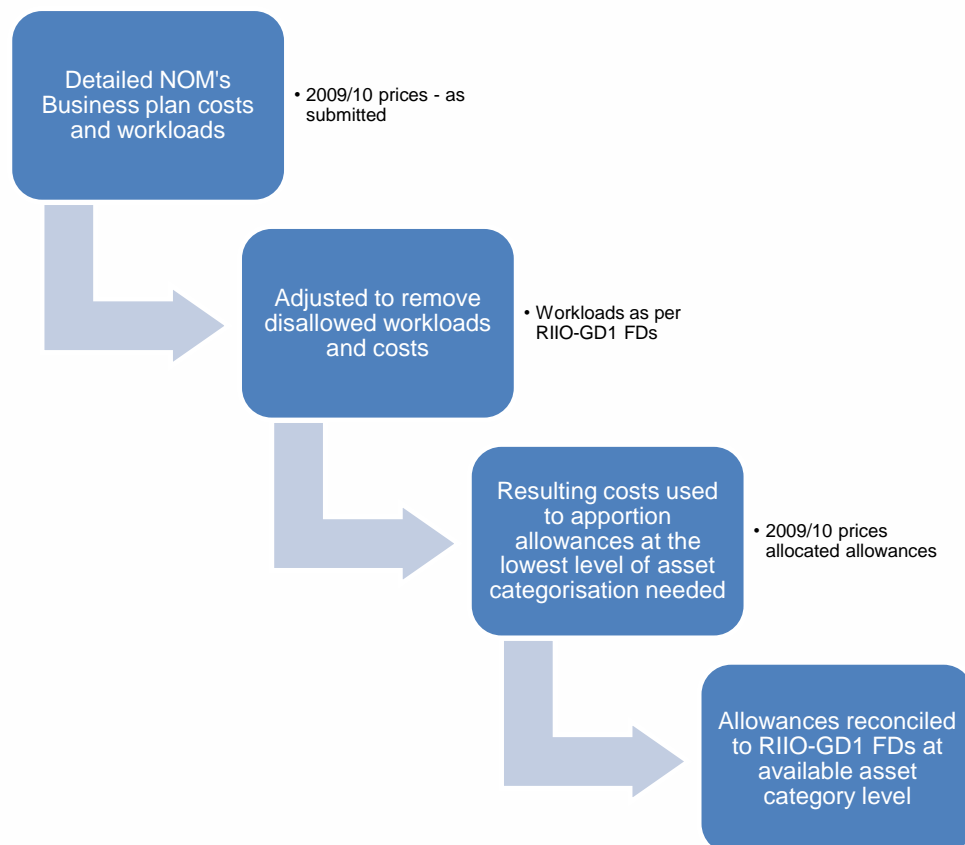
¹ RIIO-GD1 Final proposals – Supporting document – Cost efficiency Table A8.15 Wales & West RIIO-GD1 cost allowances



Further NOM's asset categories not already split out will be split on the basis of the workload submitted and allowed as part of the RIIO-GD1 business plan submission.

The workload within our business plan submission will have detailed assumed costs directly linked making it the most accurate data available for disaggregation to asset category. These detailed working files will have to be adjusted for allowed workloads and costs to then produce the allowance position.

We will then take the detailed costs linked to the asset category and apportion the allowance in line with the weighting of the business plan submitted costs to produce an asset category level allowance in 2009/10 prices (as per allowance and business plan submission), this will then be adjusted into 2020/21 prices.



7.3 **Section b (Methodology for deriving or allocating expenditure incurred)**

Actual costs are recorded within our systems at the detailed project level, for RRP reporting this is aggregated to the level required.

Overheads are allocated to detailed projects on a specific cost driver basis. Each cost driver is specific to the overhead and based on the most appropriate methodology. i.e., asset management costs allocated based on assets being managed.²

All detailed project costs are recorded in Nominal prices. Once extracted from our systems we will convert to 2020/21 prices to align to the consistent NOMS worksheet 4.1.2.

7.4 **Section c (Methodology for identifying the specific delivery elements)**

This section is assumed to be a comparison on allowed costs and workloads versus delivered costs and workloads.

We have a full record of the workload and costs submitted as part of the business plan submission, and as part of section 7.2, we will have the allowances normalised for cost and workload on that basis. This schedule can then be used to compare actual delivery versus allowed delivery.

This will be carried out on a detailed asset category and project basis to identify where we have over or under delivered.

7.5 **Section d (Step by step Methodology for calculating the costs/unspent allowances and how the effect of any deadband will be accounted for)**

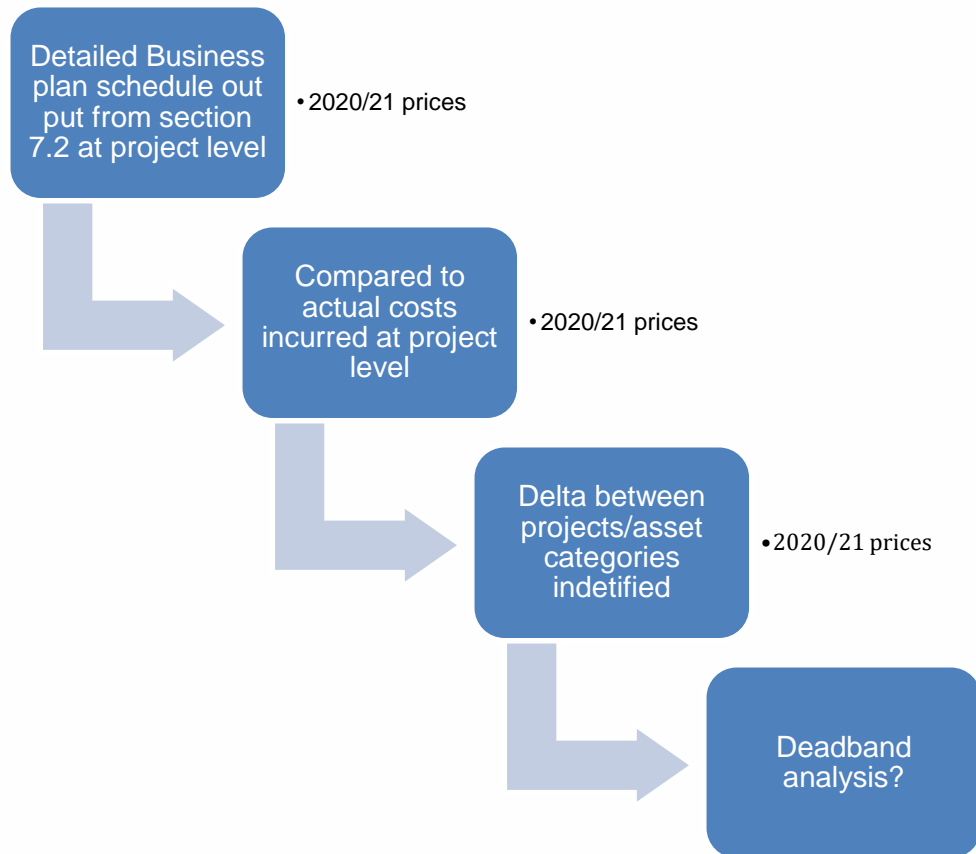
Deadband is currently not set so are not able to comment how the deadband is accounted for.

We currently do 1000's of different interventions with no major capital projects in RIIO-GD1, therefore many different small interventions could take you below or above a deadband, with this in mind we don't believe we can identify work that will

² Special condition 4b documents our allocation of costs and resources and it audited as part of our financial audit.



take us above or below a specific deadband. We believe any penalty or reward should be based on the total investment delivered.



7.6 Section e (Worked example for section a to d)

The example below is based on governors costs within Capex. This example would be consistent with all asset categories. To be clear the project examples and end comparison is a worked example and not the actual position we will be presenting as part of this final process.

Allocating allowances to projects

Allowances awarded for Capex governors of £21.4m (2009/10 prices) (see footnote 1 for reference to document).

Table A8.15 Wales & West RIIO-GD1 cost allowances

Wales & West	Ofgem Allowance (Post IQ1) £m, 2009-10 prices								RIIO Total
	2014	2015	2016	2017	2018	2019	2020	2021	
Cost activity									
LTS & Storage	13.8	13.3	11.9	11.4	12.8	11.1	10.3	12.1	96.8
Connections	7.1	7.2	7.3	7.5	7.4	7.6	7.7	7.8	59.7
Mains Reinforcement	7.8	7.8	7.8	7.9	7.9	7.9	7.9	7.9	62.9
Governors	2.3	2.4	2.2	3.1	2.8	2.9	2.7	3.1	21.4
Other Capex	23.0	21.9	16.5	13.7	12.5	12.4	16.1	15.6	131.7
of which IT	7.0	6.7	5.2	5.0	6.0	5.7	5.6	5.0	46.2
of which Vehicles	7.6	6.0	4.2	3.8	1.9	2.2	4.7	4.5	34.9
Total Capex	54.0	52.6	45.8	43.6	43.4	41.9	44.7	46.5	372.6

BP submission for Capex governor spend £58.9m (2009/10 prices) submitted in Business plan data tables (BPDT) for RIIO-GD1 2014 – 2021.³

Wales & West RIIO-GD1

3.1 Capital expenditure summary (2009-10 prices, excluding RPE)												
		Net Expenditure £m										
		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Total 2014-2021
LTS (3.2)	LTS pipelines	1.2	0.9	3.1	3.2	1.8	1.7	2.4	1.9	1.1	2.5	17.7
	NTS offtakes & other direct feeds	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	PRSSs	17.5	14.2	8.0	7.7	7.4	7.2	7.8	6.6	6.3	6.7	57.6
	LTS Storage	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Storage (LTS Linepack)	0.1	0.1	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6
Reinforcement (3.3)	Reinforcement (Mains & Govern	5.4	7.2	9.3	9.2	9.1	9.0	8.9	8.8	8.7	8.6	71.6
Governors (replacement)(3.4)	District Governor Renewal	3.8	3.7	11.4	11.5	3.6	5.6	4.8	4.9	4.5	5.2	51.5
	Service Governor Renewal	0.0	0.0	1.0	0.9	0.9	0.9	0.9	0.9	0.9	0.9	7.4
Connections (3.5)	Connections	6.3	6.4	8.1	8.4	8.5	8.8	8.6	8.8	8.8	8.8	68.7
Other Capex (3.6)	Other Capex	14.1	16.9	22.7	20.1	15.3	12.6	10.3	9.9	13.4	12.7	117.2
Total		48.4	49.4	63.9	61.1	46.7	45.7	43.7	41.8	43.8	45.5	392.3

³ WWU BPDT final submission template April 2012



We had a number of risk governors removed at Initial proposals and final proposals bringing down our BP submission position as below.

Table A2.6: GDN submitted costs for intermediate, medium pressure and commercial governors (total for RIIO-GD1, £m, 2009-10 prices, excludes RPEs) and Ofgem disallowance

	EoE	Lon	NW	WM	NGN	Sc	So	WWU
Submitted costs ¹	14.0	13.6	10.5	4.1	11.8	19.8	52.6	51.5
IP disallowance	-	-	-	-	-3.2	-10.5	-27.1	-37.8
FP disallowance	-	-	-	-	-2.9	-6.6	-19.3	-38.6

¹ We have not made any adjustment to NGGD submitted costs. We have also excluded the cost of domestic service governors from the submitted costs.

Therefore, our underlying business plan submission position is £58.9m less FP disallowance of £38.6m, gives us a BP submission of £20.3m. (Noting this is slightly higher than disaggregated position due to the way Ofgem allocated allowances from a totex position back to asset categories – and clearly shows significant work required to disaggregate these allowances for the GDNs at this stage).

Below shows how we will adjust the underlying project information to allowances. Using the underlying project costs to allocate the allowances to reconcile to the final proposals.

Project/ intervention	Asset ref	BP costs £m 09/10 prices	spend % of total	FD allowance £m 09/10 prices
Project 1	Gov x	2	10%	2.1
Project 2	Gov x	3.5	17%	3.7
Project 3	Gov x	1.2	6%	1.3
Project 4	Gov x	0.5	2%	0.5
Project 5	Gov x	0.9	4%	0.9
Project 6	Gov x	2.7	13%	2.8
Project 7	Gov x	0.2	1%	0.2
Project 8	Gov x	0.4	2%	0.4
Project 9	Gov x	1.9	9%	2.0
Project 10	Gov x	3.5	17%	3.7
Project 11	Gov x	2	10%	2.1
Project 12	Gov x	1.5	7%	1.6
Total		20.3	100%	21.4



Allocating expenditure incurred

As mentioned in section 7.3, project costs are recorded in our systems including the overheads apportioned within the system. The information is extracted from SAP for RRP aggregation. Below shows the extract from our SAP systems.

Activity Code	Activity Code Desc	Fiscal Year/Period	Cost Center	Cost Center Desc	GL Account Desc	GL Account Nr	Document Type	Document Desc	Item Text	WBS Element	
80411	IPILP Growth LH > 1.	V3/001/2021	WW01N351	Pressure Manage Miscellaneous PO	WW0161400070	WE	Goods receipt	INV 2065185 PENTRE COURT		B-06-4530-11	2017 GOVERNOR REPLACEMENT ST FRANCIS RD
80411	IPILP Growth LH > 1.	V3/007/2021	WW01N351	Pressure Manage Miscellaneous PO	WW0161400070	WE	Goods receipt	INV 2071885 PENTRE COURT		B-06-4530-11	2017 GOVERNOR REPLACEMENT ST FRANCIS RD
80411	IPILP Growth LH > 1.	V3/008/2021	WW01N351	Pressure Manage Contractors	WW0161600000	WE	Goods receipt	WIE 1710120 NEIL DALLEY		B-06-4576-1	2018 DG KIOSK REPLACEMENT
80411	IPILP Growth LH > 1.	V3/010/2021	WW01N351	Pressure Manage Plant Hire PO	WW0161400045	WE	Goods receipt	JUDITH WASON		B-06-4576-1	2018 DG KIOSK REPLACEMENT
80521	D Gov -Whole site (M)	V3/009/2021	WW01N351	Pressure Manage Miscellaneous PO	WW0161400070	RE	Invoice - gross	DAVID THOMAS - NOVEMBER 2020		B-06-4612-14	2019 DG - Whole site replacement
80521	D Gov -Whole site (M)	V3/010/2021	WW01N351	Pressure Manage Miscellaneous PO	WW0161400070	SB	Accrual	> 7 BAR ACCRUAL - P10. BRYAN DONKIN - TYNANT		B-06-4612-14	2019 DG - Whole site replacement
80521	D Gov -Whole site (M)	V3/010/2021	WW01N351	Pressure Manage Instrumentation PO	WW0161400065	SB	Accrual	> 7 BAR ACCRUAL - P10. INDUSTRIAL GRP - TYNANT		B-06-4612-14	2019 DG - Whole site replacement
80521	D Gov -Whole site (M)	V3/010/2021	WW01N351	Pressure Manage Regulators PO	WW0161400055	WE	Goods receipt	SR25 DOCUMENTATION		B-06-4612-14	2019 DG - Whole site replacement
80521	D Gov -Whole site (M)	V3/010/2021	WW01N351	Pressure Manage Regulators PO	WW0161400055	WE	Goods receipt	PROFILE WWU (FPCD-005)		B-06-4612-14	2019 DG - Whole site replacement
80521	D Gov -Whole site (M)	V3/010/2021	WW01N351	Pressure Manage Regulators PO	WW0161400055	WE	Goods receipt	G2-ST-114W-DP-W		B-06-4612-14	2019 DG - Whole site replacement
80521	D Gov -Whole site (M)	V3/011/2021	WW01N351	Pressure Manage ERO Anc Xfr Stores	WW0161700016	YT	YT	STORES ALLOCATION		B-06-4612-14	2019 DG - Whole site replacement
80521	D Gov -Whole site (M)	V3/011/2021	WW01N351	Pressure Manage Bulk Backfill	WW0161610002	WA	Goods issue	VALVE CHAMBER WALL SEC 305X305MMX100M		B-06-4612-14	2019 DG - Whole site replacement
80521	D Gov -Whole site (M)	V3/011/2021	WW01N351	Pressure Manage Bulk Backfill	WW0161610002	WA	Goods issue	VALVE CHAMBER TOP SEC 150X480X480MM VC2A		B-06-4612-14	2019 DG - Whole site replacement
80521	D Gov -Whole site (M)	V3/011/2021	WW01N351	Pressure Manage Bulk Backfill	WW0161610002	WA	Goods issue	VALVE CHAMBER BASE SEC 75X305X305MM VB1C		B-06-4612-14	2019 DG - Whole site replacement
80521	D Gov -Whole site (M)	V3/011/2021	WW01N351	Pressure Manage Bulk Backfill	WW0161610002	SA	GL account doc	STORES MANAGEMENT FEE		B-06-4612-14	2019 DG - Whole site replacement
80521	D Gov -Whole site (M)	V3/011/2021	WW01N351	Pressure Manage Bulk Backfill	WW0161610002	MP	MP	STORES MANAGEMENT FEE		B-06-4612-14	2019 DG - Whole site replacement
80521	D Gov -Whole site (M)	V3/011/2021	WW01N351	Pressure Manage Partners Stores Cost	WW0161600018	SA	GL account doc	STORES ALLOCATION		B-06-4612-14	2019 DG - Whole site replacement
80521	D Gov -Whole site (M)	V3/011/2021	WW01N351	Pressure Manage Contractors	WW0161600000	SB	Accrual	> 7 BAR ACCRUAL - P11. GREENFROG - TYNANT INI		B-06-4612-14	2019 DG - Whole site replacement
80521	D Gov -Whole site (M)	V3/011/2021	WW01N351	Pressure Manage Miscellaneous PO	WW0161400070	SB	Accrual	> 7 BAR ACCRUAL - P11. CRANE - TYNANT INI		B-06-4612-14	2019 DG - Whole site replacement
80521	D Gov -Whole site (M)	V3/011/2021	WW01N351	Pressure Manage Miscellaneous PO	WW0161400070	SB	Accrual	> 7 BAR ACCRUAL - P11. BRYAN DONKIN - TYNANT		B-06-4612-14	2019 DG - Whole site replacement
80521	D Gov -Whole site (M)	V3/011/2021	WW01N351	Pressure Manage Miscellaneous PO	WW0161400070	RE	Invoice - gross	DAVID THOMAS - JANUARY 2021		B-06-4612-14	2019 DG - Whole site replacement

As this data is recorded in Nominal prices, it is summarised by regulatory year and converted into 2020/21 prices for the 8 years of GD1.

RRP Governors													
Year	WBS	Description	Current Activity	Category	Transfers Fixed	Transfers PM & FLIM	Transfers ERO	Transfers DLO	Materials / Invoices	Contractors	DLO	Reinstatement	
2018	B-24-6052-5	Maesdydderddwen, Llanelli : Land & Materia	80402	Housing	20	0	0	0	-320	0	0	0	
2019	B-06-4345-1	Framptons Factory: Contractor	80402	Housing	0	0	0	0	-1	0	0	0	
2014	B-24-6070-K31	Sirhowy/Harford Gardens Wholesale Replac	80402	Housing	0	6	0	0	-1,356	0	0	0	
2015	B-24-6105-01	Cefn Glyn Coch, Install CCTV	80407	IPILP Renewal	35	0	0	0	-815	0	0	0	
2016	B-06-4402	Bryn Lupus, DG Replacement	80407	IPILP Renewal	0	0	0	0	-1,524	0	0	0	
2014	B-06-4408	Wenvoe DG Replacement	80407	IPILP Renewal	0	4	0	0	-124	0	0	0	
2020	B-06-4263	GLANRHYD HOSPITAL 2	80407	IPILP Renewal	5	0	0	0	-1,537	0	0	0	
2019	B-06-4401	Gresford, DG Replacement	80407	IPILP Renewal	0	3	0	0	-257	0	0	0	
2015	B-06-4330	DG Rivulet Road	80409	MP/ILP Renewal	0	0	0	0	-1,237	0	0	0	
2015	B-06-4166	Maesdydderddwen, Llanelli : Land & Materia	80410	MP/ILP Renewal	0	0	0	0	138	0	0	0	
2018	B-06-4441	Sirhowy/Harford Gardens Wholesale Replacem	80411	IPILP Growth	0	0	0	0	3,264	0	0	-2,525	
2019	B-06-4445	Catnic Access Road Wholesale Replacement	80411	IPILP Growth	0	0	0	0	15,364	76,011	0	98	
2020	B-06-4500-1	Penally Heights Asset Ref 4339	80411	IPILP Growth	0	0	0	0	29,110	0	0	0	
2016	B-06-4530-11	2017 GOVERNOR REPLACEMENT : PENTRE C	80411	IPILP Growth	0	0	0	0	526	0	0	0	
2021	B-06-4535	2017 GOV REPLACEMENT ST FRANCIS RD	80411	IPILP Growth	0	0	0	0	0	132	0	0	



Identifying specific delivery elements

Once both the allowances and costs are in the same format and consistent years prices we are able to compare any over or under delivery.

Project/ intervention	Asset ref	BP costs £m 09/10 prices	FD allowance £m 09/10 prices	Actual costs	Delta to allowances
Project 1	Gov x	2	2.1	0.50	1.6
Project 2	Gov x	3.5	3.7	3.00	0.7
Project 3	Gov x	1.2	1.3	1.00	0.3
Project 4	Gov x	0.5	0.5	1.50	-1.0
Project 5	Gov x	0.9	0.9	0.80	0.1
Project 6	Gov x	2.7	2.8	2.90	-0.1
Project 7	Gov x	0.2	0.2	0.10	0.1
Project 8	Gov x	0.4	0.4	0.00	0.4
Project 9	Gov x	1.9	2.0	0.00	2.0
Project 10	Gov x	3.5	3.7	3.00	0.7
Project 11	Gov x	2	2.1	1.50	0.6
Project 12	Gov x	1.5	1.6	0.00	1.6
Project 13	Gov x			3.10	-3.1
Project 14	Gov x			2.20	-2.2
Project 15	Gov x			4.10	-4.1
Total		20.3	21.4	23.7	-2.3

As we have made clear we believe any penalty or reward should be based on the total investment delivered.

