Wales & West Utilities

RIIO-GD1 Seventh Year Annual Report

Continuing to deliver for our customers

Year ended 31 March 2020

WALES&WEST UTILITIES

Strategic Performance Overview

Strategic Performance Overview

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Continuing to deliver for our customers

In this section:

1.0 Continuing to deliver for our customers

This past year has been an important one in the designing and developing of our long-term future plans, responding to the Covid-19 pandemic as well spending more time than ever listening and responding to the needs of our customers. The energy sector remains under the spotlight and is clearly central to delivering "Net Zero" by 2050. Our response includes a commitment to deliver a net zero ready network by 2035 and we're dedicated to working collaboratively to support a Green Recovery out of Covid-19.

Our focus this year has been on delivering improvements for our customers in the way we deliver our work, minimising disruption and improving our communications with a clear focus on supporting those most in need. We are aware of the impact of the economic climate on affordability and we have worked hard to innovate and change the way we do things to deliver lower costs and better value for all our customers.

I am, therefore, pleased to present our latest annual strategic performance report for 2019/20 which is summarised below:-

- For the seventh consecutive year of RIIO-GD1, delivered of all our regulatory commitments whilst spending less than our regulatory allowances; sharing these costs savings with our customers
- Overall forecast bill reduction over the whole of GD1 of 18% with our portion of the average domestic gas consumers' bill at £132 in 2019/20
- Continuing to deliver excellent customer satisfaction; scored at 9.17 out of 10; maintaining our position as second against all eight of the gas distribution networks
- Resolving more than 8 out of 10 complaints within a day
- Increasing focus on the Priority Services Register this year resulting in 250% more people signed up to the register than last year; all of which are now eligible for further help and support
- Intently listening to our customers and stakeholders through a range of communication channels resulting in the submission in December 2019 of our customer-led business plan for RIIO-GD2 and developing our 5yr GD2 business plan with significant impact and challenge from our independent Customer Engagement Group
- Saved almost 900 families an average of £661 per annum through our Healthy Homes, Healthy People programme
- Recovering more than £400k from unregistered gas users and a future proposal to place an incentive on this to keep customers safer and to ensure fairer charging

Once again, our efforts have been recognised across the board with a range of external recognitions including:

- A unique "ROSPA Gold" award for the seventh year in a row
- RoSPA Oil and Gas Sector Award for the second successive year
- Retained the British Standard for Inclusive Service Provision (BS18477)
- Presented with Business Improvement Strategy Award from the Welsh Contact Centre Awards
- IGEM Company of the Year and IGEM Energy Efficiency Award
- R&D Programme of the Year from Business Green Technology Awards
- Clean Energy Scheme Award from Regens Green Energy Awards

I am proud to lead colleagues in WWU who are passionate about continuing to improve our services to customers and who are committed to delivering a green future for the benefit of our country.

Looking ahead

Having delivered our most stakeholder informed Business Plan for RIIO-GD2 to Ofgem we look forward to working together throughout 2020 to deliver the best possible outcome for our customers as well as a business which is sustainable to attract the investment and innovation needed to deliver Net Zero.

Within the constraints of the ongoing impact of Covid-19, the effects of which have already been seen in 2020/21, for example on our network usage and levels of non-essential operational activity, we are continuing to work closely with our customers to deliver against their priorities and offer the best possible value for money. Alongside this we will continue our engagement with regional and national stakeholders to support a whole systems approach to work towards delivering Net Zero.

At the heart of our success are our people – from the front line to back office support. The outstanding value for money service we continue to provide is very much down to them. Our values driven culture, accredited by Investors in People, supports and challenges our people to deliver for customers in an effective, innovative way.

Leading Wales & West Utilities remains a great privilege for me. I want to thank colleagues, customers and all our stakeholders for their continued support, and I look forward to continuing to lead this business into the future.

Graham Edwards
Chief Executive
Wales & West Utilities

1.1 Board Statement

Board Statement

Our ambition is to continue to deliver outstanding levels of gas safety, reliability, and customer service so that we are trusted and valued by the millions of people we serve every day – now and into the future.

The Company's vision of success is to be consistently recognised as one of the top performing company by our stakeholders and regulators.

Underpinning this strategy is a strong compliance culture which the Board directly monitors through its Health Safety & Environment, Audit and Treasury committees. Incentive arrangements for the senior management team are directly linked to safety, customer and efficiency targets. These targets are updated annually.

I am pleased to report that the Company has met all the output targets agreed as part of the RIIO-GD1 price control in 2019/20 and continues on track to deliver the output targets across the final year of the RIIO-GD1 price control. However the COVID-19 pandemic may impact on the delivery of these outputs and into RIIO-GD2 specifically Mains Replacement and Fuel Poor Network Schemes.

The Company has again demonstrated strong customer service and safety performance throughout the year and after over 40 years of investment we now have a 73% PE network.

The focus of the Board is to support the strategy through significant investments and innovations aimed at improving the performance of the business. Our strategy and associated processes make sure we continuously capture feedback from a broad range of stakeholders, review it and put in place appropriate action plans to continuously improve our services.

The principal risks associated with the business, and the associated mitigations, are regularly reviewed by the Board and remain largely unchanged over the course of the year. These include a RIIO-GD2 final settlement which does not adequately fund our efficiently incurred costs, breach of legal and regulatory obligations, health and safety failure, network asset performance failure, employee retention and financial risks associated with interest rates, liquidity and credit. The long term future of the business is directly linked to the role of gas networks in meeting the UK's decarbonisation targets. The expanding role of the gas network, as highlighted by the increase in green gas connections and peaking power plants, shows significant opportunity for energy customers from increased integration of the gas and electricity networks, together with increased renewable gas and renewable electricity. The interaction between the gas and electricity networks is set to increase in the move to create a dynamic, flexible, integrated energy system to support a green energy UK.

We're collaborating with other gas networks on the Gas Goes Green project designed to identify ways to meet the challenges in delivering a low-cost, low-carbon gas network across the UK. The project has produced a detailed plan to deliver a zero-carbon gas system that includes the regulatory, technical and operational actions that are needed to deliver this in the UK regions for which each gas network maintains responsibility.

To support energy planners understand the impact of different decarbonisation options, we developed Pathfinder, which analyses current energy data and future options, assessing the viability of any decarbonisation approach. It defines the implications of energy investment plans, showing their impact on energy reliability, and the resultant carbon emissions, in a way that is easy for people outside of our industry to understand.

We continue to contribute to a range of national hydrogen ready projects including H21 – a collaborative gas industry programme focused on demonstrating how converting the UK gas network to carry 100% hydrogen can tackle the UK's decarbonisation challenges and in addition, in the year, we have completed our HyHy project which is investigating the use of hybrid hydrogen systems as a pathway to decarbonisation. We are currently engaging with the HSE to support the entry of up to 1% Hydrogen into our distribution network at Swindon.

More generally it is important the UK government and Ofgem recognises and fully understands the current and future role of gas networks in meeting the energy needs of the UK and as part of our Business Plan for RIIO-GD2, we have developed a Net Zero ready vision which describes our role in helping the UK government meet its decarbonisation ambition.

The RIIO-GD2 business planning process is currently underway and is a clear opportunity for the regulator to address issues such as the inadequacy of the current debt index used in RIIO-GD1 to fund our efficiently incurred cost of debt and aid in our country's goal of achieving Net Zero by 2050. We are committed to working with the regulator through the business planning process towards resolution of such issues.

As a Company we will continue to influence policy makers by making the case for effective use of the gas grid and decarbonised gas as essential elements of a low cost, low carbon and sustainable energy system as the UK aims for a Net Zero Energy system.

Andrew J Hunter
Chairman of the Board

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Strategic Performance Overview

In this section:

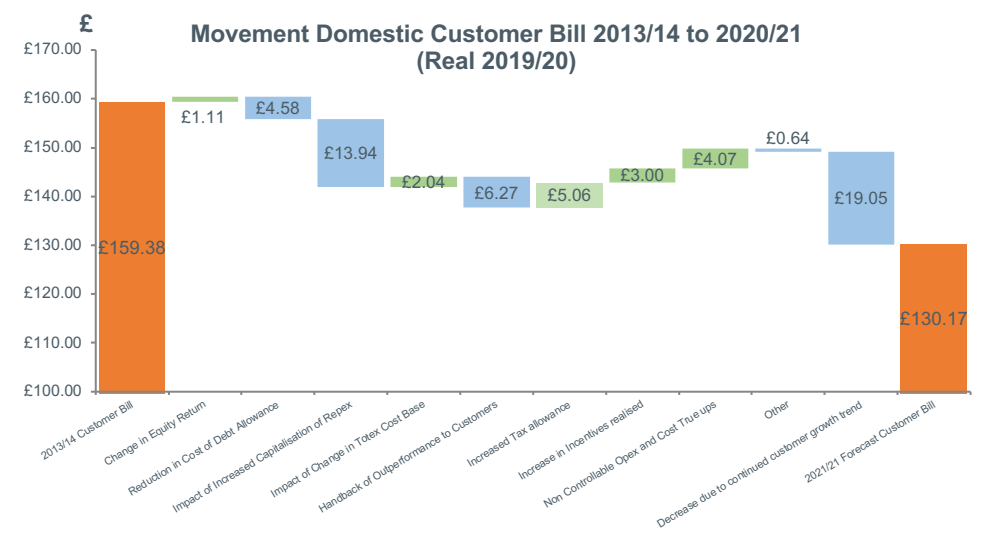
2.0 Strategic Performance Overview

2019/20 Summary Performance

RIIO-GD1 Forecast Performance

2.1 Customer Bill Update

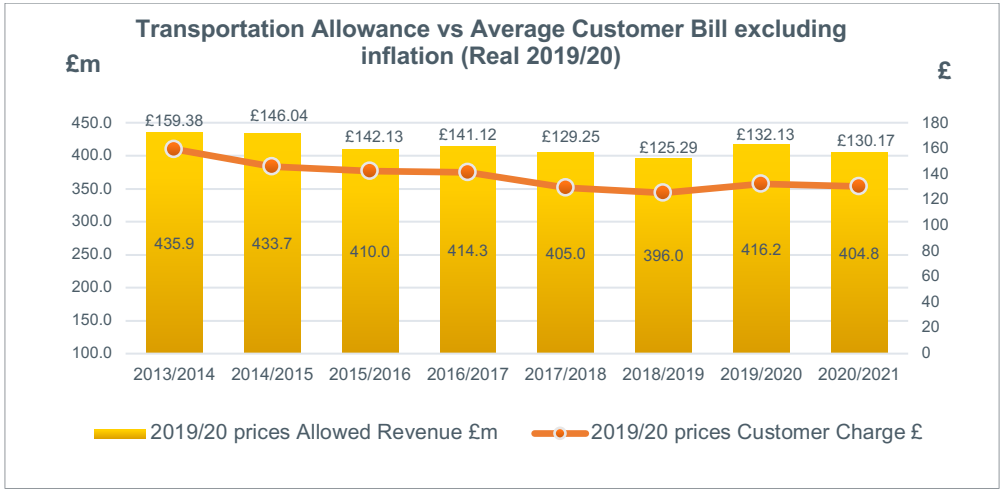
There was a 5% increase in the customer bill between 2019/20 (£132) and 2018/19 (£125), due to business rates and exit capacity cost increases but a reduction since the start of GD1 from £159 (17% reduction), consumers only benefit if passed on by shippers. Figures exclude exit capacity charges. Over the whole of RIIO-GD1 we are forecasting a total reduction in the customer bill of 18%. **All figures are in 2019/20 prices.**



From the start of the price control the domestic customer bill (excluding inflation) has steadily fallen. Customer bill movements fall into two elements, movements in our "Allowed Revenue" as set by Ofgem at the start of the control period; and changes in customer numbers and volumes of gas flowing through our network each year i.e. if there are a greater number of customers, the revenue to be collected from each customer will decrease. The most significant movements between the start of GD1 (2013/14) and 2019/20 are explained below:

- Domestic customer growth trend – over the course of RIIO-GD1 our domestic customer base has increased and the average gas used by each customer has decreased. The net effect of this is to reduce the amount paid by each customer.
- Increased capitalisation of Repex – the Repex capitalisation rate increases from 50% at the start of RIIO-GD1 to 100% at the end of RIIO-GD1 (93% in 2019/20). This increases the proportion of slow to fast money. As slow money is spread over 45 years, this increases the period over which we recover our investment in the network and reduces customer bills in the short term.
- Increased tax allowance – there was no tax allowance in 2013/14 due to the use of regulatory losses.
- Reduction in cost of debt allowance – WWU is funded for a return on RAV. The return rate is based on cost of debt, equity and gearing. Cost of equity and the notional level of gearing, against which we are funded, remain constant through RIIO-GD1. However, the cost of debt allowance is based on the rolling 10 year iBoxx index which is decreasing and therefore causes a year on year reduction in return.
- Handback of outperformance to customers – where we have invested efficiently and taken advantage of innovation, we spend less than our Totex allowance in a given year, part of this underspend (36.8%) is shared with customers through reduced allowed revenues.

Customer Bill Forecast to the end of RIIO-GD1



Figures exclude NTS exit capacity charges.

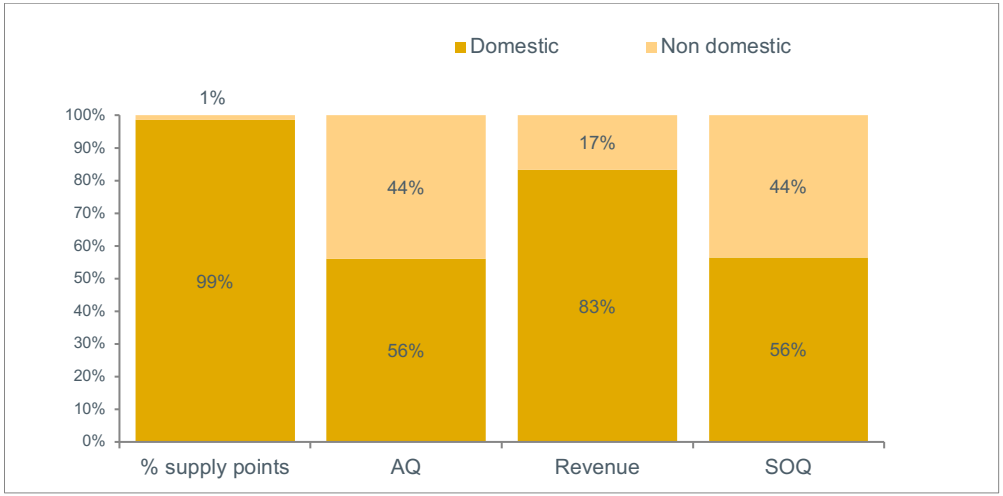
In 2019/20, the cost true up for business rates from 2017/18 increased WWU's allowed revenue in 2019/20 by £12m, following a rates valuation in 2017. We demonstrated to Ofgem that this increase was efficiently incurred and consequently we are allowed to pass these costs onto customers. In total, cost true ups and adjustments to pass through costs account for £5 of the year on year increase in the customer bill. The total customer bill movement of £7 from 2018/19 to 2019/20 also includes a c.£4 increase relating to the year on year movement in correction factor, which adjusts for any over or under recovery of allowed revenue on a two-year lag basis.

New connections to our network have continued over the past 12 months and we now supply over 2.5m customer premises.

2.1 Customer Bill Update

Domestic loads make up over 99% of our connections but account for only 56% of the annual throughput, however 83% of our revenue is paid by domestic customers. This is due to the fact that large customers (non-domestic) pay a lower unit rate on transportation charges. Charges are split by load band (based on annual quantity forecast to be used in the year). All customers in a particular load band are charged the same unit rate.

Non domestic customers (load band 2 and above) pay a lower unit rate due to where they are situated within the gas network. A smaller customer (usually domestic customers and small businesses) is more likely to be at the end of a gas network i.e. gas flows through more of our pipes to get to the customer, whilst large customers are more likely to be closer to the start of the network i.e. using less of our pipes. The unit rates are weighted so that customers that use more of the network i.e. domestic customers absorb more of the cost of maintaining it.



AQ = Annual quantity of gas transported

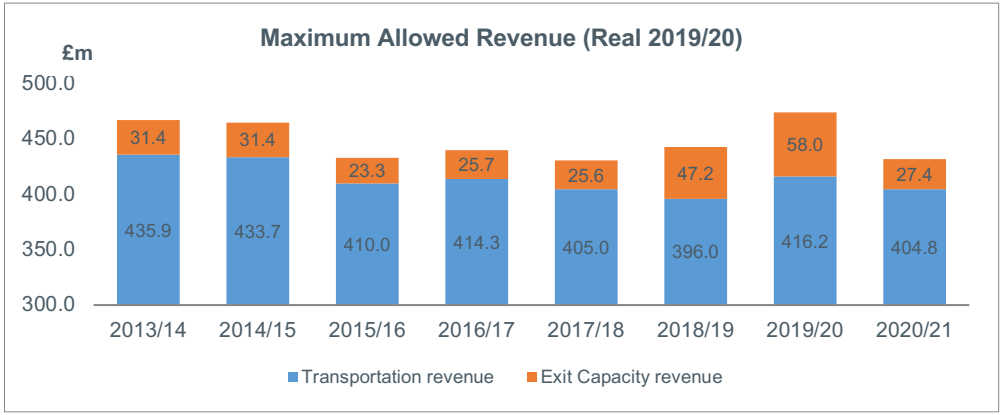
SOQ = Peak capacity usage (System Offtake Quantity)

Currently domestic consumers on our network use an average AQ of 12,541 kWh of gas each. The use of the average AQ is important, as the unit rates charged in any one year will reflect these. If a network's allowance remained constant throughout the price control, but its users required less capacity year on year, there would be a corresponding increase in unit rates in order to collect the allowance permitted and therefore would be no overall change in the cost to the consumer irrespective of the amount of gas they consumed.

The Ofgem calculation of customer bills for Gas Distribution Network uses the same average domestic AQ across all networks and therefore doesn't reflect the actual numbers of domestic customers connected to, and the volumes of gas flowing through, each network. All the GDNs believe that this calculation should use their own individual AQ figures to more accurately reflect the actual bills being charged and the number of customers connected to each network.

2.2 Forecast Maximum Allowed revenue over the Price Control

The seventh year of the RIIO price control, 2019/20 shows total allowance increasing above those in the first six years. Two key reasons behind the changes are:



1. The NTS Exit Capacity costs, the amount we are charged by National Grid for them to get gas to our 17 offtakes, increased dramatically in 2016/17 (from half way through the year) and 2017/18, from those forecast at Final Proposals (and against which our allowances were set). The two-year lag mechanism to recover differences between allowed and actual pass through costs meant that these cost increases were reflected in allowed revenue in 2018/19 (half a year's impact) and 2019/20 (a full year's impact). In addition, we increased our base allowance for 2018/19 and 2019/20, two years in advance, on the basis of NTS indicative prices at the time. So there was a double impact of the recovery of prior year increases as well as recovery of the in-year increases in NTS Exit Capacity costs.

2. Business Rate charges, which are a pass-through item, increased significantly at the valuation effective 6th April 2017 and which Ofgem deemed efficient after the network operators challenged the rating authorities. This increased annual costs by over 36% from £30.2m in 2016/17 to £41.2m in 2019/20 (in 2019/20 prices).

2.2.1 Allowed vs collected for 2019/20 (excluding exit capacity)

The allowed transportation revenue in 2019/20 was £416.2m. In this year we actually collected slightly more at £419.1m (a difference to allowance of 0.7%).

This over collection was driven by the assumption on chargeable base. We set prices on the assumption that each year the annual quantity (AQ) falls as the average connection becomes more efficient from new technology.

2.2.2 Forecast performance in 2020/21

Forecast allowed transportation revenue for 2020/21 is £404.8m (compared with a forecast collected revenue of £398.9m). This would result in an under recovery of £5.9m. The revenue adjustment "k", is subject to a two-year lag and so will be reflected in the pricing decision for 2022/23. The under recovery is partly a result of the UK wide lock down which began just before the start of the 2020/21 regulatory year and impacted on commodity revenues as well as a number of shipper AQ reductions which were implemented subsequent to the setting of prices.

The decrease in allowed revenue between 2019/20 and 2020/21 reflects a large negative MODt adjustment to base revenue. The MODt adjustment passes back to the consumer the share of Totex underspend reported and the element of saving from the lower cost of debt allowance and adjust for known reopeners. In 2019/20 there were positive adjustments to MODt for the Enhanced Physical Site Security reopener (£13.7m in 19/20 prices) and an increase to exit capacity base allowance (£15.3m in 2019/20 prices). These adjustments were not repeated in 2020/21.

The decrease in exit capacity allowed revenue in 2020/21 as compared with 2019/20 reflects a return to the final proposals base allowances (WWU increased its exit capacity base allowance for 2018/19 and 2019/20) as well as a large negative cost true up from 2018/19. The negative cost true up arose as a result of a significant decrease in NTS exit capacity prices from October 2018 compared to previous actual and indicatives prices.

On 28 May 2020, the Authority approved modification proposal UNC678A: 'Amendments to Gas Charging Regime (Postage Stamp). The aim of this was to produce stable and predictable transmission charges and ensure compliance with TAR NC (Commission Regulation (EU) 2017/460). The new NTS exit capacity prices based on a postage stamp charging methodology will come into effect on 1 October 2020.

2.2.4 RIIO GD2 forecast

WWU is currently working with Ofgem to establish the allowances for the next price control, RIIO-GD2 which covers the five years from 2021/22 to 2025/26. We are committed to working with the regulator to ensure a fair deal for networks and ultimately end consumers, which address issues such as the inadequacy of the current debt index used in RIIO-GD1 to fund our efficiently incurred cost of debt and the volatility of pass through costs.

2.3 Return on Regulated Equity

The return on regulatory equity ("RORE") has been calculated in accordance with Ofgem's approach in its 2018/19 RFPR report issued on 8 March 2019. This involves two measures. The first measure assumes notional gearing of 65%. On that basis, RORE was 8.0% for 2019/20 (10.6% for 2018/19). The second measure uses actual gearing. On that basis, RORE was 7.7% for 2019/20 (10.8% for 2018/19).

The main reasons for the increase (decrease) over 2018/19 are due to:-

- Reduced Totex outperformance
- Higher debt underperformance
- Lower tax outperformance performance

Shareholders continue to receive average cash returns less than RORE and the allowed real equity rate of 6.7%. Based on notional equity, for 2019/20 the real cash return received by shareholders was 2.5% (2018/19: 1.3%), and average real cash returns to shareholders for RIIO-1 are expected to be just 4.1%.

This is because the revenue allowance for cost of debt falls significantly short of the actual efficient cost of debt and derivatives. The financial impact of this serious shortfall, notwithstanding sector leading Totex outperformance driven by efficiencies realised to date in RIIO-GD1, is adversely affecting credit rating outlooks and equity financeability.

2.4 WWU Totex Outperformance

Outputs, Totex costs and Workloads

The forecasted costs and workloads included within this section aim to efficiently deliver the Outputs as defined within the RIIO-GD1 Final Proposals. We must highlight some key uncertainties that continue to impact the forecast cost and workloads submitted within this RRP return. **(Note: these do not include any future costs for the impact of Covid-19 as agreed with Ofgem.)**

- Roll out of Smart Meters ~ the minimal roll out to date has not allowed us to estimate costs associated with Smart Meters within the forecast.
- Winter severity ~ we experienced a number of mild winters in recent years with the last sustained cold winter being 2010/11. However we did experience a significant cold spell in February and March 2018. The winters of the current RIIO-GD1 period have been some of the mildest in history with the ten warmest years on record occurring since 2002. We clearly are required to plan for a 1 in 20 winter and therefore our future resource forecasts (including through the implementation of our winter contingency plan and the use of reservists etc.) reflect this requirement. However, it should be noted that our final year forecast continues as in previous years to assume an average winter.
- The economy ~ whilst the economic downturn in the first few years of RIIO-GD1 has impacted some specific workloads, for example general reinforcement and non-rechargeable diversions, the indications are that the UK as a whole is now growing and again our future forecasts reflect a level of workload more aligned to a growing economy as opposed to a declining economy. This is subject to any impact from the Covid-19 pandemic.
- Fuel poor connections ~ in the first seven years of RIIO-GD1 we successfully connected 10,673 customers who were in fuel poverty. Following the Ofgem review of the Fuel Poor Network Extension Scheme, a revised Output target of 12,590 connections, up from 10,800, over the eight year period was agreed with Ofgem in September 2015. Ofgem subsequently directed further changes to the scheme eligibility criteria including the removal of the IMD criteria reducing the number of connections qualifying as fuel poor. We believe this alongside a lack of funding in ECO_2T and from other sources will make meeting our output target very challenging.
- Resources ~ we are seeing a decline in the number of resources we are able to recruit in certain areas of the network (predominately in the South West) along with increasing market rates. The level of recruitment and impact on costs remain a concern for WWU. We have tried to mitigate this risk in 2019/20 through recruitment and training of a number of resources in specific areas of the network such as Cornwall.
- The full impact of Covid-19 pandemic on costs and workloads within WWU has yet to be fully realised and has created a level of uncertainty. We have seen a small impact on 2019/20 regulatory costs however any significant changes will be seen in the coming year and into RIIO-GD2. As agreed with Ofgem, forecast costs and workloads exclude the impact of Covid-19.

The table below provides a Totex overview of the forecast costs against the 2018/19 view.

In headline terms, the controllable costs were broadly in line with the previous years of RIIO-GD1 noting the reduction in 2017/18 due to a number of one off releases with the final year's performance likely to be similar to the previous year within RIIO-GD1 (subject to the points above). There is however, clearly less certainty the further into the future we forecast including the impact that Covid-19 has on costs and workloads.

High level controllable forecast costs for RIIO-GD1 remain in line with the prior year's view.

Forecast costs (2019/20 Prices)	2014 Actual	2015 Actual	2016 Actual	2017 Actual	2018 Actual	2019 Actual	2020 Actual	2021 F'cast	Forecast RIIO Total	2018/19 view
Total Capex	58.9	49.0	54.7	52.9	52.4	56.5	51.1	59.1	**434.6**	432.1
Total Repex	83.2	87.6	86.3	84.6	71.4	79.9	79.5	79.3	**651.7**	656.5
Total Controllable Opex	107.7	101.3	92.9	94.3	82.2	86.0	94.1	98.4	**757.1**	755.5
Total non-controllable Opex	85.1	85.2	84.9	111.0	122.6	91.2	98.2	94.3	**772.6**	753.6
Total funded costs – including uncertainties	**334.9**	**323.2**	**318.8**	**342.7**	**328.6**	**313.6**	**322.9**	**331.1**	**2,615.9**	**2,597.6**
2018/19 view	334.9	323.2	318.8	342.7	328.6	313.6	319.7	316.0	**2,597.6**	

- Future uncertainties related to Smart Metering, Streetworks & Covid-19 are excluded from the above table

The increase in future non-controllable costs from 2018/19 view reflects:-

- Higher rates bills following the 2017 Valuation Office Agency review which Ofgem has confirmed continue to be pass through as well as increases to exit capacity costs following the approval by the Authority of modification proposal UNC678A: 'Amendments to Gas Charging Regime (Postage Stamp), which amends the NTS charging methodology from 1 October 2020.

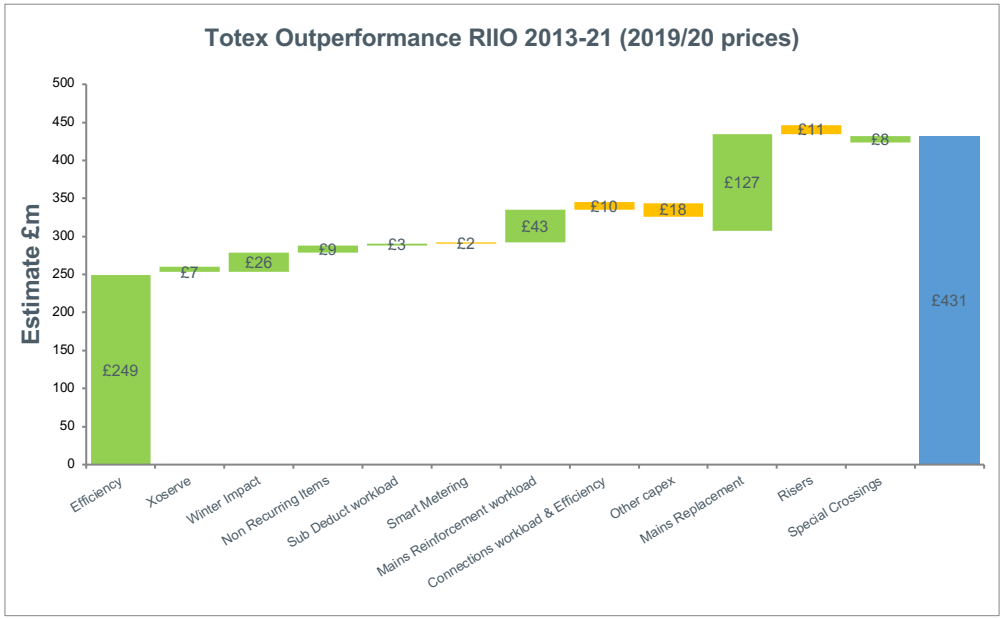
2.4 WWU Totex Outperformance

2.4.1 Totex Outperformance Summary

The forecast financial outperformance on controllable costs reported in the RRP 2019/20 for the eight-year RIIO-GD1 price control period was £431.3m whilst delivering on our commitments to our customers. The information is contained within Section 3 and within the supplementary commentary submitted. See Section 3 onwards for 2019/20 and cumulative Totex performance. Data has been produced on a best endeavor's basis. The allowances were set using regression analysis and therefore it is not possible to produce a detailed walkdown. A high level walk down and commentary is shown below: -

(*All financial allowances in this document match back to the Price Control Framework Model as confirmed with Ofgem)

			Opex	Capex	Repex	Totex
Final Proposals (19/20 prices)			**898.6**	**527.1**	**849.0**	**2274.6**
Details of cost under/overspend	**Cost Driver Category**	**Ref no.**	**Estimate of RIIO Totex under/overspend (£m estimate)**			
Efficiency	Efficiency	1	(98.5)	(76.8)	(73.7)	(249.0)
Xoserve	External factors	2	(7.2)	0.0	0.0	(7.2)
Winter Impact	External factors	3	(26.1)	0.0	0.0	(26.1)
Non Recurring Items	External factors	4	(8.7)	0.0	0.0	(8.7)
Sub Deduct workload	Efficiency/Price control assumption	5	(2.7)	0.0	0.0	(2.7)
Smart Metering	External factors	6	1.6	0.0	0.0	1.6
Mains Reinforcement workload	Efficiency/External factors	7	0.0	(43.3)	0.0	(43.3)
Connections workload & Efficiency	Efficiency/External factors	8	0.0	9.7	0.0	9.7
Other Capex	Efficiency/External factors	9	0.0	18.0	0.0	18.0
Mains Replacement	Efficiency/External factors	10	0.0	0.0	(126.8)	(126.8)
Risers	Efficiency/External factors	11	0.0	0.0	11.3	11.3
Special Crossings	Efficiency/External factors	12	0.0	0.0	(8.1)	(8.1)
Forecast Cost Spend			757.1	434.6	651.7	1,843.3
Variance			**141.5**	**92.5**	**197.3**	**431.3**



2.4 WWU Totex Outperformance

Key Initiatives – Efficiency (impacting TOTEX)

- Efficiency (1)
- **Working time solutions** – The introduction of Working Time Solutions in December 2012 to our operational workforce, which has optimised working patterns and reduced the ongoing overtime bill.
- **Productivity improvements**, employee contract changes and severance – The voluntary severance schemes and the introduction of revised terms and conditions for new employees along with our continued focus on productivity has significantly contributed to the success in WWU's cost base step change.
- **Contract re-negotiations** – Renegotiation with partners of key strategic contracts allowing for outperformance including a cutting edge alliance to drive maximum benefit for consumers.
- **Utilisation of FCO's** – Training all of our first call operatives (FCOs) to carry out new metering work such as Smart Metering, transferring otherwise efficiently incurred non productive FCO labour time from our base emergency costs along with the utilisation of FCO's on replacement & capital activities providing lower costs for our customers and allowing flexibility to deliver against tough conditions such as the Beast from the East.
- **Innovation** – Techniques introduced leading to cost savings such as coil trailers for larger pipe coils and Ductile Iron Cutters.
- **Network management optimisation** – Our leading asset management strategy that strives for lowest whole life Totex cost is maintaining the health of our assets at efficient levels, whilst minimizing our costs for the benefit of consumers.
- **Other small initiatives** – We have introduced various smaller initiatives that have resulted in a cost reduction such as making employees more accountable for the equipment they use and only replacing when needed with a process of control in place.

Highlights of Opex outperformance

- Xoserve (2) – A reduction in Xoserve costs in Opex resulting from the new funding and governance arrangements (FGO)
- Winter Impact (3) – We experienced a number of mild winters in recent years with the last sustained cold winter being 2010/11. However we did experience a significant cold spell, albeit, short in February and March 2018 (Beast from the East) and ensured standards of service were met. The first five winters of the current RIIO-GD1 period have been some of the mildest in history, with the ten warmest years on record occurring since 2002. Our future forecast is based on an average winter and we are required to resource to maintain gas flow for a one in twenty winter.
- Non-Recurring Items (4) – A number of costs accrued and expected to be incurred by WWU prior to the RIIO-GD1 price control were reversed in 2017/18 resulting in a decrease in costs.
- Sub Deduct workload (5) – Our approach is based on removal of the sub-deduct network at the lowest overall cost. This has been done by using innovative ways of removing the risk, which include adoption by third parties, removal of the prime meter by installing a bypass and reconfiguring the sub-deduct set up. We have also found that a number of sub-deducts no longer exist.
- Smart Metering (6) – We have seen an impact of the Smart Metering installation programme on the number of emergency calls we receive and which need to be attended to with forecasted cost expected to be £1.6m over the price control.

Highlights of Capex outperformance

- Mains Reinforcement workload (7) – To ensure our reinforcement workload is sufficient, without over-engineering, we invest significantly in network analysis tools and expert analysts to operate them. Where these tools indicate capacity issues, analysts consider a wide range of intervention options, balancing cost and benefit. These options go through a challenge and review process with operational colleagues to ensure we end up with the best solution, taking into account areas such as, engineering resilience future demand on the network – lowest Whole Life Cost.

  We have outperformed allowances through:-

  - Use of excellent data and analytical tools to ensure we only intervene when necessary
  - Innovative approaches to dealing with capacity issues – avoiding expensive and disruptive pipe laying where possible
  - Outperforming unit cost allowances when we lay pipe, and
  - Reduced general reinforcement workload as a result of the downturn in the economy
- Connections workload & efficiency (8) – costs have increased against the allowance in RIIO-GD1 due to the following: -
  - Utilisation across TOTEX activities of our direct labour resource which can be more expensive than external resource, however this approach ensures that direct labour remain fully productive, therefore minimising overall Totex costs. This is an example of how we manage our workload and resources in a TOTEX environment.
  - We use our direct labour to complete surveys prior to most connections jobs resulting in a better experience for the customer.
- Other Capex (9) – Increased investment in key infrastructure elements especially IT throughout the price control including the ongoing SAP upgrade to S4 HANA along with new operational depot builds and purchasing newer vehicles and equipment.

2.4 WWU Totex Outperformance

Highlights of Repex outperformance

- Mains Replacement (10) – We have delivered on our promises whilst driving efficiency and thus benefiting consumers. We aim to continue to deliver our stakeholder driven outputs through effective decision making, innovation and a focus on efficiency.

The key strategic alliance contract has ensured that WWU and our customers benefited from lower delivery rates through RIIO-GD1 to date, than we would expect to see in future price controls. However, as can be seen from the performance of our alliance contract in this and the last few periods, this is not a sustainable position that we will be able to replicate as we enter RIIO-GD2. Below are some areas which provided a benefit to our alliance contract in early years of the price control, but as opportunities are exhausted our underlying cost base continues to rise, only protected in the short term by our contractual arrangement. This is placing an increased strain on our delivery partners.

In the early years of this price control, the labour market was in a favourable position and our mains replacement programme benefited from a reliable and consistent workforce for a number of years before contract negotiations; the labour rates in our fixed contractual pricing reflected this. In the past few years, however, this landscape has changed significantly, and labour rates are continuing to increase. This is being driven predominantly by competition with other GDNs and other capital programmes (including in the water, electricity, nuclear, telecoms and transport sectors). We continue to invest heavily in our workforce to try to offset some of this rising pressure however this has been a significant investment by us and our Mains Replacement contract in the year, an investment also likely to be required in the future.

More flexible pipe selection criteria provided an opportunity to outperform, providing greater flexibility and a short-term opportunity to design schemes that were significantly larger than had been possible previously. This was reflected in the rates we were charged and allowed us to benefit from the following:

- Using larger teams in smaller geographical areas – the success of the five/six person team model during the first half of GD1 improved operational efficiency and produced a level of performance beyond our forecasts. However, this opportunity continues to reduce as scheme sizes become smaller and less efficient.
- More efficient support functions – larger teams delivering larger quantities of work in a small geographical area can be serviced more easily by support functions. For instance, logistics support functions have fewer projects to service and there is less travel time between sites. Reinstatement teams can also deal with a higher number of excavation pits in one geographical location saving on travel time. Again, this opportunity continues to reduce as schemes sizes become smaller and less efficient.
- Lower mobilisation / demobilisation costs – larger and fewer schemes reduced the significant cost of safe mobilisation and demobilisation of sites in the first years of the price control. Scheme sizes now continue to fall, and the number of teams/schemes is increasing which is pushing up cost.

Lower management to team ratio – operational and safety management is most efficient when team sizes are maximised and the number of schemes that are in progress are kept to a minimum. The change in the design constraint allowed us to achieve this balance. Now these schemes have been depleted we are seeing a fall in the size of our teams with a related increase in scheme numbers – moving back to a similar profile as in GDPCR1.

We have significantly driven down mains replacement delivery costs in RIIO-GD1 through a number of innovations, some of which enable enduring efficiencies, others sustainable only in the short term.

- 500m coil trailers: Our self-funded innovation project to develop 500m coil trailers has significantly supported insertion and has reduced the number of insertion pits, pipe wastage and the environmental impact. This is now used throughout the GDNs, driving improved performance for all gas consumers.
- Ductile Iron (DI) cutters: In the first half of GD1 we avoided DI and instead targeted cast iron/spun iron because of its lower risk, and to avoid the complications and associated cost of cutting DI to connect services to the newly inserted PE main. This approach was taken to reduce the whole life cost of the programme while a more cost-effective solution was developed through our DI cutter innovation project. We led on an NIA project to develop a suitable tool that makes this activity easier and more cost-effective. DI cutters are now operational and will help to counteract the increased cost of replacement DI as we begin to replace the higher proportion of DI in our remaining programme.

However, the opportunity for such large schemes has been largely exhausted. As the proportion of 8" abandonment and Tier 2 abandonment has increased in the year, we see scheme sizes reducing to a size similar to that experienced in GDPCR1. As scheme sizes have reduced, so have team sizes.

- Risers (11) – Intervention on multi-occupancy buildings (MOBs) and Special Crossings is broadly maintaining the overall health of these asset populations. We achieved this at lowest whole life cost by innovative solutions and by utilising life extending refurbishment options where appropriate and where cost efficient.

  The intervention plan for MOBs is primarily replacement at present but we are leading on a number of innovation projects to develop use of cost effective refurbishment techniques. In the first seven years of RIIO-GD1 we replaced another 1,263 risers supplying 3,553 consumers. Although this has come at a higher cost than expected, we believe that this is the correct course of action, given the associated risks.
- Following the tragic events at the Grenfell Tower we have been carrying out further checks on our high rise MOB population to ensure that the risk imposed by fire is managed appropriately. Our current spend to date of £14.3m within this asset group demonstrates our commitment to ensuring a safe, reliable supply to these types of buildings.
- Special Crossings (12) – Intervention on Special Crossings is broadly maintaining the overall health of these asset populations. We achieved this at lowest whole life cost by innovative solutions and by utilising life extending refurbishment options where appropriate and where cost efficient.

2.4 WWU Totex Outperformance

2.4.4 NTS exit capacity revenue and charges

During RIIO-GD1, WWU has been faced with dramatically changing NTS costs, which we incur in receiving gas at the 17 offtakes into our network. The first of these changes occurred in the October of 2016/17 however the forecasts from NTS for the previous years at T-3, T-2 and T-1 had not signposted these changes. Consequently, allowances were set too low for the cost incurred which resulted in a cost true up in 2017/18 and also 2018/19.

In 2016/17 the NTS forecast going forward showed that the increase to WWU would be enduring. Therefore, in line with our licence, we requested, and Ofgem approved, an amendment to WWU's allowance reflecting NTS forecasts in T-3. This resulted in the allowance in 2018/19 and 2019/20 being increased to £41.9m and £46.6m in nominal prices respectively. The final charges levied on WWU by the NTS were much lower than previously forecast and consequently allowances for 2018/19 and 2019/20 significantly exceeded the costs to be incurred, generating a large negative cost true up feeding into 2020/21 and 2021/22.

In order to pass this cost reduction back to customers faster than it would have been under the two-year lag mechanism, WWU reduced its NTS exit capacity charges in December 2018. For 2019/20 WWU again sought to collect a lower exit capacity revenue figure than was allowed through the current price control, to pass the benefit of significantly reduced NTS costs to customers faster than the 2-year lag mechanism allows.

An industry modification (UNC678) was raised by National Grid NTS in January 2019 to amend the pricing methodology in place. The aim of this was to produce stable and predictable transmission charges and ensure compliance with TAR NC (Commission Regulation (EU) 2017/460). The main difference to the current long run marginal cost (LRMC) methodology was the use of capacity weighted distance basis to allocate revenues.

On 28 May 2020, the Authority approved modification proposal UNC678A: 'Amendments to Gas Charging Regime (Postage Stamp), one of the ten alternative modification proposals to UNC678 submitted to Ofgem. The new NTS exit capacity prices which are based on a postage stamp charging methodology will come into effect on 1 October 2020 and from this point, prices at all offtakes will be the same. WWU's NTS 2020/21 cost forecast rose from £25.9m using prices calculated under the LRMC methodology, published in their indicative notice in May 2020, to £32.0m under the UNC678 postage stamp charging methodology, published in June 2020. A key focus over the next year will be to assess whether the new methodology impacts the behaviour of those booking capacity on the NTS as this may have a significant effect on NTS revenue recovery and therefore NTS exit capacity charges in future years.

2.4.5 Theft of Gas

WWU continued to focus on identifying and investigating cases of theft of gas in 2019/20 in order to return this money to users through a lower allowed revenue charge. The net benefit to the consumer in 2019/20 was £307k.

In year prices £'000s	Gross payments received	Recovery Net of VAT	Associated Costs	Net benefit/ (cost) to the consumer
2014/15	0.0	0.0	29.3	-29.3
2015/16	496.8	415.4	95.6	319.8
2016/17	857.4	754.9	124.1	630.8
2017/18	540.2	489.8	161.8	328.0
2018/19	326.8	293.1	132.4	160.6
2019/20	516.8	437.4	130.4	307.0
Total	2,738.0	2,390.6	673.6	1,716.9

The number of theft of gas investigations carried out by WWU in 2019/20 has decreased to 252 from 290 in the previous year. Associated costs relate to the number of investigations undertaken. However, the overall volume and value of gas illegally consumed has increased when compared to 2018/19. Consequently, we will request a pass through for £307k which will result in a reduction to our allowances in the regulatory year 2020/21.

2.5 Innovation and the Future of Energy

2.5.1 Changing shape of the network

With more than 80% of heat and power at peak times met by the gas network in the UK, we're planning for the future – to make sure we continue to deliver reliable energy at affordable costs for customers, whilst helping the UK meet decarbonisation targets.

The facts

- There has been a shift change in the interaction between the gas and electricity networks – which is set to increase in the move to create a dynamic, flexible, integrated energy system to support a green energy UK.
- Gas and electricity are now increasingly intertwined at distribution level due to CHP, power generation and gas fired heat networks.
- After over 40 years of investment we now have a 73% PE network.
- More electric vehicles are charged with intermittently-generated renewables, this creates larger demand swings on the electricity network, affecting demand on the gas distribution system as gas peaking plants respond to maintain capacity on the electricity network.
- Green gas entry has expanded rapidly from concept to practical BAU over the last few years – further expansion needs investment and the right level of government incentives – and this is the subject of the latest consultation from BEIS called "Future Support for Low Carbon Heat" consultation.
- It is now widely acknowledged across the energy sector that storage is key, not just for minutes, but hours/days/months, and across seasons – gas provides this at the cheapest cost. The gas network is already a storage battery.
- Intermittent renewables continue to be supported by gas – the energy system would not work without this balance. We now see the impact of this on gas demand profiles, experiencing regular occurrences of double breakfast peaks when flexible generation comes on to meet the deficit that intermittent renewables create.
- The demand for gas vehicle fuelling has increased over the last year, particularly in the South West area of the network.
- We have seen a step change in industry activity looking at the conversion of the natural gas network to transport up to 100% Hydrogen. We have engaged on relevant initiatives and innovations to date in this area.
- As part of our Business Plan for GD2, we have developed a Net Zero ready vision which describes our role in helping the UK government meet its decarbonisation ambition.
- We have connected 19 biomethane sites during the period 2013-2020 and have a further five accepted enquiries.

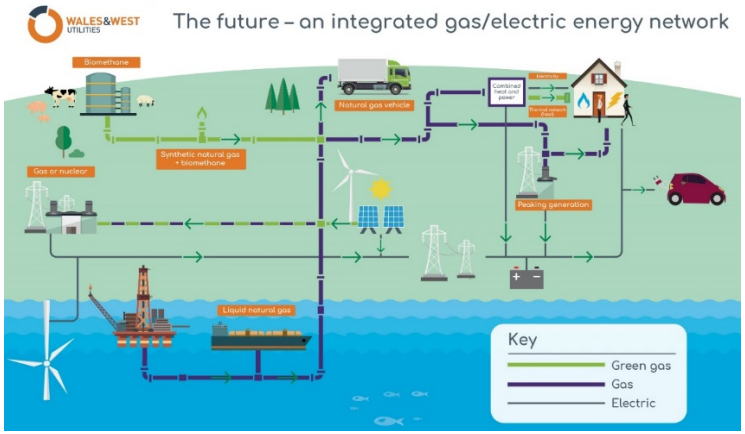
Our response to date

- The Bridgend Study, Freedom Project, Pathfinder 2050 Model – We have delivered a number of unique projects looking at the best options available to decarbonise heat in homes and simulate future energy supply and demand needs. Further projects are in progress to build upon the knowledge gained through this earlier work on how the gas network will best compliment the energy network of the future.
- Pathfinder Plus – Building on from the success of our Pathfinder 2050 model, this model takes into consideration costing of technologies and impact of the National Grid FES. To make sure we have a secure supply of affordable and sustainable energy for future generations, we must continue to invest in and use the gas network.
- Green City Vision – Following on from the ground-breaking Freedom Project, we have delivered a project jointly with UK Power Networks and SSEN. This project was completed in July 2019 and demonstrated the opportunity to optimise infrastructure investment, using Pathfinder modelling, to enable gas and electricity networks to work together to assess whole-systems solutions to decarbonise energy in the most affordable way.
- OptiNet – We continue work on proving new applications of existing technology through field trials to primarily facilitate additional green gas into the network. We are leading on the 'Smarter Pressure Control' phase, to maximise existing demand for green gas entry whilst maintaining security of supply; and Cadent leading on the compressor trial to create additional demand. This project is supported by Passiv Systems and Costain.
- Regional Future Energy Scenarios (FES) – In 2018 we completed a project with Regen providing forecasts locally, across 15 zones and 5 distinct scenarios for the whole of our network, in order to inform network planning and support future investment decisions. The scenarios focus on the evolution of heat demand, delivery technologies and fuels, the growth of gas fired power generation and the changing gas supply mix, including the introduction of hydrogen and injection of biomethane. In 2020, we have revisited the scenarios for the South Wales region to develop integrated whole system distributed FES with WPD which will feed into the Net Zero 2025 South Wales project.
- Net Zero 2050 South Wales – Net Zero 2050 is an initiative to speed up progress of the decarbonisation of South Wales in order to hit Government targets of 'net zero' by 2050. The project aims to design a pathway by bringing stakeholder (utilities, industry, academia, SME, consultants, Government, regional experts etc.) views together. It will adopt a whole system view and technology neutral perspective, critically review and challenge the options, quantify them with facts and analysis, and assess the impact on utility networks. This work can form the framework for how other regions of England and Wales will meet the zero-carbon challenge in the future, and influence approaches across a range of sectors.
- Gas Goes Green – launched this year, this project brings together the engineering expertise from the UK's five gas network operators, building on the foundations of the existing grid infrastructure, innovation projects and the wider scientific community. This is a blueprint to meet the challenges and opportunities of climate change, delivering net zero in the most cost effective and least disruptive way possible.
- Hydrogen Ready – Continue to contribute to a range of national projects including H21 and in addition, in the year, we have completed our HyHy project which is investigating the use of hybrid hydrogen systems as a pathway to decarbonisation. Currently engaging with the HSE to support the entry of up to 1% Hydrogen into our distribution network at Swindon.

2.5 Innovation and the Future of Energy

- Business Plan – In December 2019, we submitted our business plan to Ofgem for the five-year period of 2021-26. Within the plan was an ambitious commitment in the long term to create a Net Zero ready gas network by 2035, along with shorter term targets and objectives to meet this vision along the way. One of the most valuable elements proposed was investment to support increased injection of biomethane (an appendix to our business plan – 13J, provides more details around our bio-gas proposals). Investment is also proposed for smart control systems on the gas network to favour low carbon feeds and compressors to move gas back up the network to areas of higher demand or into storage systems.

We continue to pro-actively share the outcomes from our work to ensure it is visible and challengeable. We are delighted that key decision makers within BEIS and Welsh Government are engaging with us on the outcomes and usefulness of our work in their future plans.



2.5.2 Green gas

Green Gas injection into the gas distribution network has reached a level where we now have an increasing need to manage pressures more effectively to maximise green gas entry capacity. To facilitate this need, we continue to work on innovative field trials to prove the technology and communications required to move towards more automated control of the medium pressure network as a first step. As part of the OptiNet project, we are leading on the Smarter Pressure Control phase to automate control of our pressure regulators via our SCADA system. We have also started a project working with Utonomy, to enable remote control of a pressure regulator which would reduce manual setting changes at site.

In addition to dynamic pressure management, establishing compression as a workable solution has the potential to remove a number of existing barriers to entry where Green Gas suppliers want to connect to parts of the network, where there is insufficient demand available to take their gas. In 2017/18 we undertook preliminary works to assess the feasibility of installing compression in the part of our network which is most constrained. We are also supporting Cadent Gas Network with the installation of a compressor in their network and will utilise the learning to inform future installs in our area.

The OptiNet project as described above, will consider how smarter pressure control and compression can best work together and will provide a robust assessment and recommendation of the best approach to take to optimise green gas entry. A third phase of the OptiNet project is to review the available storage techniques and how storage can compliment the compression and control elements.

We have been working with the University of South Wales to investigate the potential for innovative storage techniques to allow biomethane sites to inject in a more flexible way in the future.

We currently have 19 green gas connections with a maximum connected capacity of 1,757 GWh/year which is enough to provide heat to almost 150,000 homes. We have seen a 12% increase in contracted maximum capacity due to expansion projects at some of our connected sites.

2.5.3 Embedded power generation

We continue to receive enquiries for small flexible generation plants and have connected a further six sites this year which provide an additional 48 MW electricity output from our network. These small power stations play an important role in offering balancing services to the power networks, effectively using storage in our network to provide flexible generation to the electricity network. Power generation from the 42 power plants connected to our network is now 1.547GW, providing the ability from them to potentially power some 2.5million homes, this has decreased over the last year due to some of our larger legacy sites closing down. We have a further 0.2 GW of accepted capacity that is due to connect soon and 0.39 GW of potential sites listed on the Capacity Market register.

The levels of connections seen to date have not required significant investment for storage or pressure management on our Network. However, given the continued loss of coal and nuclear generation over the next few years, along with increasing power requirements for new loads such as electric vehicles and interconnectors, we are forecasting that flexible generation requirements will continue to increase as will the need for investment on our network. We have completed a number of distribution reinforcement schemes and are now seeing investment being triggered at our gas pressure reduction sites on the higher pressure tiers. We have modelled all potential power generation loads in our area and the resulting investment required is significant, should all of these sites connect.

We continue to engage with these customers to better meet their needs and understand the future impact of this growth sector on our network.

2.5 Innovation and the Future of Energy

To enable this significant growth, we have developed new processes for these sites and contributed to a joint GDN Distributed Power Generation Workshop hosted by Cadent Gas in January 2020, to further engage with developers, consultants and other GDNs on our processes. This built on a similar workshop hosted by Wales & West Utilities in 2018.

2.5.4 Gas Vehicle Fuelling

We have connected one Compressed Natural Gas (CNG) bus fuelling station this year taking our total connected sites for bus fuelling to four (3 for buses and 1 for HGVs). We have one further CNG fuelling station which is planned to connect to our network later in 2020 and will provide fuel for a mix of fleet specific (such as buses and distribution vehicles for large retailers) and have several similar enquiries in progress. To improve forecasting in this area and assist with industry guidance and standards, we are engaging with the Natural Gas Vehicle Network, and are supporting Cadent's Gas Transport Transition Pathways project. This aims to provide transition pathways from the initial forays into CNG fuelling to a large-scale hydrogen fuelling infrastructure, with gas distribution networks at its heart.

Processes and commercial requirements for these sites are the same as those for power generation and we are engaging with the site developers to ensure their needs are met whilst maintaining safety and security of supply. It has not been necessary to invest in reinforcement to date because of these connections, but several forecasting sources suggest future growth in this area. Bristol City Council's commitment to fuelling the city's entire bus fleet with CNG indicates further growth in this area.

2.5.5 Investing in our future

In 2019/20 we invested £1.6m (2018/19: £1.4m) on the 30 (2018/19: 25) Network Innovation Allowance (NIA) projects we undertook, an increase in the number of live small-scale projects.

Our annual "Network Innovation Allowance Activity Summary" which details how we, and our innovation partners, have used the seventh year NIA, is available on our website.

The key headlines are:

- We took part in 32 innovation projects (30 NIA and 2 NIC projects – H21 – Phases 1 and 2). Since 2013, we have started 93 NIA projects with a total investment of £9.6m. We maintain a balanced innovation portfolio, consisting of a range of projects with 61% seeking to deliver for today's customers and 39% delivering a net zero ready network.
- To date our innovation portfolio has delivered benefits of £12.8 million (£1.26m through NIA and £11.56m business-as-usual innovation). We have led a range of research and demonstration projects to build towards a net zero ready network by 2035, and to ensure that our impact on the environment is minimised.
- We are committed to rolling out previously proven innovation into our business. We've built a strong innovation operating model that maximises project potential, allowing us to report that 26% of projects in our portfolio are successfully implemented within the business.
- 17 (2018/19: 18) of these projects have been worked on collaboratively with one or more of the other Network Licensees. As trusted leaders, we were the lead GDN on six (2018/19: nine) of these collaborative projects.
- We maximise our innovation activities through collaboration. We are proud to maintain a record high level of collaboration, with 65% of our NIA project portfolio since 2013 having been delivered in collaboration with one or more network licensees. This sets us apart from the sector average, driving our average project cost lower than that of our GDN partners.
- We have participated in projects with over 123 unique partners – since 2013 we have nurtured relationships with over 450 organisations, businesses of all sizes and academia.

Some examples of the NIA projects we've worked on in this regulatory year are outlined below:

- ❖ We are leading our Ramp Up project, bringing together 11 partners, including the EIC, 4 gas and electricity networks, 3 manufacturers, Frazer-Nash Consultancy and children's charity Whizz-Kidz. The project will produce a better, easier to use kerb transition ramp, reducing the impact our essential works have on vulnerable customers using mobility scooters and wheelchairs. Importantly, the project engages Whizz-Kidz who will test the prototypes and make recommendations on which they found easiest to navigate. The scale of this collaboration will ensure the benefits of our solution will be felt and learning shared throughout the UK.
- ❖ We are collaborating with Cadent Gas on a project called Duraseal Repair Method. This project seeks to develop and test a novel pipe leakage repair technique for use below ground. The repair system has the potential to replace time consuming and expensive products and techniques used to repair joints in our pipework. This has the potential to deliver benefits and could result in reduced unplanned interruption times by allowing us to carry out repairs immediately ourselves, without using specialist service provisions. We are at a key stage in the project, a prototype has been developed and laboratory testing has commenced.

To date, we have assessed and trialled almost 90% of projects implemented by other GDN's. We have adopted seven technology solutions from other networks' NIA projects. A recent example includes NGN's Total stub end abandonment project.

We continue to work closely with the UK gas networks through the ENA's Gas Innovation Governance Group and continue to share project learning and outputs through the implementation log. This log is updated regularly to provide updates to all networks as projects reach completion and are embedded within our respective organisations.

2.5 Innovation and the Future of Energy

Knowledge dissemination amongst network licensees and the wider industry is a crucial element of the NIC and NIA. Each year, we host an annual conference to highlight and effectively share key learning. Ensuring that we provide the best value for money for conference attendees is essential to effective dissemination, so in 2019/20, we alongside gas and electricity network licensees attended the free-to-attend and long-running Utility Week Live conference. Here, we reached 6,000 stakeholders, sharing a breadth of new learning on both gas-specific and cross-vector innovation projects.

This year, in collaboration with all UK gas and electricity network partners, we produced our second joint innovation strategy. Developed through an extensive stakeholder engagement process where we engaged a total of 221 interested stakeholders via an online survey, a series of interactive webinars and two stakeholder workshops in Glasgow and London and building on the original strategies published in 2018. Both our Gas Network Innovation Strategy and the Electricity Network Innovation Strategy centre on five key principles and five themes, which reflect our three overarching objectives. The principles and outcomes apply to all innovation activity, from inception through to roll out. These provide us with a shared strategic direction, help innovators understand how they can work with us and provide a means of categorising and tracking investment

Throughout the year, our innovation team attended over 200 engagements at 36 locations around Great Britain. We have disseminated key learnings in a myriad of ways, via webinars, at project specific events, and at key industry events. Our flexible approach to dissemination ensures that we meet the needs of and provide the best value for money to as many interested stakeholders as possible.

2.6 Summary of Output Performance

The headline is that we continue to deliver the commitments measured annually and across all of RIIO-GD1. As we look ahead to the end of RIIO-GD1 our key concerns and challenges remain:

- Fuel Poor connections. The change to the eligibility criteria after we agreed a 20% increase to our RIIO-GD1 commitments will make achieving the additional 20% very tough.
- Secondary workload deliverables – metallic service replacements. We have been engaged with the Ofgem Cost & Output team to highlight our strategy and approach. In simple terms we are not seeing the target mix of work to deliver the numbers anticipated ahead of RIIO-GD1. We will deliver our committed Network Output Measures (NOMs) targets and will use this measure to demonstrate that the lower level of metallic services workload has been risk traded off against more efficient work.
- Interruptions targets – WWU was the only GDN which chose not to resubmit lower targets as part of the mid point review of interruptions. We are committed to our original challenging targets and intend to deliver these within RIIO-GD1 rather than weaken these targets.
- Smart Meter rollout – The supplier led programme has been delayed and we will see the mass rollout over the remaining RIIO-GD1 period and possibly into RIIO-GD2. We are engaged locally and nationally with the suppliers and will continue to play our role to support our customers.
- The development and delivery of the RIIO-GD1 close out process which is currently underway

RIIO-GD2 Outputs – we have engaged with our stakeholders to ensure we commit to deliver a suite of Outputs and Outcomes that stakeholders require in RIIO-GD2 and we are working through the draft determinations published by Ofgem on 9th July to understand what we can deliver for our customers.

2.6.1 One Year Outputs

Primary Output	Deliverable	Units	FP target	2019/20	2018/19	2017/18	2016/17	2015/16	2014/15	2013/14
Connections	Guaranteed Standards of Performance		✓	✓	✓	✓	✓	✓	✓	✓

Primary Output	Deliverable	Units	FP target	2019/20	2018/19	2017/18	2016/17	2015/16	2014/15	2013/14
Environmental	Shrinkage	GWh	409	340.0	351.5	371.5	378.5	381.1	394.8	417.4

Primary Output	Deliverable	Units	FP target	2019/20	2018/19	2017/18	2016/17	2015/16	2014/15	2013/14
Safety (emergency response)	97% Controlled gas escapes	% attended within 2 hours	≥97%	99.70%	99.80%	98.60%	99.40%	99.60%	99.60%	99.49%
	97% Un-controlled gas escapes	% attended within 1 hour	≥97%	99.00%	99.00%	98.00%	98.50%	98.60%	98.50%	98.30%
Safety (management of repairs)	"GS(M)R 12 hour escape repair requirement"		✓	✓	✓	✓	✓	✓	✓	✓
	Management of repairs (Repair risk)		✓	✓	✓	✓	✓	✓	✓	✓
Safety (major accident hazard prevention)	GS(M)R safety case acceptance by HSE		✓	✓	✓	✓	✓	✓	✓	✓
	COMAH safety report reviewed by HSE		✓	✓	✓	✓	✓	✓	✓	✓

Primary Output	Deliverable	Units	FP target	2019/20	2018/19	2017/18	2016/17	2015/16	2014/15	2013/14
Customer service	Planned interruptions survey	Scores out of 10	8.5	8.83	8.80	8.74	8.62	8.72	8.68	8.59
	Emergency response and repair survey	Scores out of 10	9	9.56	9.56	9.53	9.55	9.55	9.44	9.14
	Connections survey	Number	8.4	9.13	9.18	9.19	9.17	8.88	9.01	8.34
	Complaints metric	Number	11.57	2.48	2.51	2.80	2.83	4.43	6.93	7.39

2.6 Summary of Output Performance

2.6.2 Forecast Eight-Year Outputs

Primary Output	Deliverable	Units	FP target	2019/20	GD1 to Date	Forecast to end of GD1
Connections	Introduce distributed gas entry standards			✓	✓	✓

Primary Output	Deliverable	Units	FP target	2019/20	GD1 to Date	Forecast to end of GD1
Social Obligations	Fuel poor connections 2	# connections	≥12,590	1,091	10,673	12,590
	Carbon monoxide awareness		✓	✓	✓	✓

Primary Output	Deliverable	Units	FP target	2019/20	GD1 to Date	Forecast to end of GD1
Environmental	Shrinkage (leakage)	GWh	≤398	320.3	320.3	334.2
	Provide biomethane connections information	Total Connected Capacity KWh	✓	✓	✓	✓

Primary Output	Deliverable	Units	FP target	2019/20	GD1 to Date	Forecast to end of GD1
Reliability (loss of supply)	Duration of planned supply interruptions	Million minutes	≤92	6	65	73
	Duration of unplanned supply interruption	Million minutes	≤45	3	28	33
	Number of planned supply interruptions	#	≤451,235	35,310	304,957	343,711
	Number of unplanned supply interruptions	#	≤90,169	7,861	60,906	70,079
Reliability (network capacity)	Achieving 1 in 20 obligation		✓	✓	✓	✓
Reliability (network Reliability)	Maintaining operational performance		✓	✓	✓	✓

Primary Output	Deliverable	Units	FP target	2019/20	GD1 to Date	Forecast to end of GD1
Safety (mains replacement)	Iron mains risk reduction (based on MPRS)		≥98,727	8,465	106,140	109,735
	Sub-deducts networks off-risk		✓	✓	✓	✓

2.7 Performance Against Primary Outputs

2.7.1 Entry Connections

In year output	Deliverable	Section Ref	Units	2019/20	2018/19	2017/18	2016/17	2015/16	2014/15	2013/14
Connections	Introduce distributed gas entry standards	6.1.10	Live sites	19	19	18	16	12	2	1

We continue to believe in a future integrated energy network and have introduced distributed gas entry standards to support the connection of Biomethane injection. We haven't connected any new sites during the 2019/20 year but we do have five sites in varying stages of development, which we are hopeful will connect over the next few years. In fact, our next site is on track to be commissioned in early 2021 and will be our first Bio-SNG site, located in Swindon.

Injecting green gas into the distribution network directly helps both to achieve climate change targets (reducing reliance on fossil fuels) and to improve security of supply. We continue to support potential and existing customers through the connections process to ensure a reliable, clean and safe supply of gas into our network. Research suggests that there is significant feedstock available to support further growth in this area and a BEIS consultation is underway with the aim of "increasing the proportion of 'green gas' onto the grid in a bid to reduce UK use of natural gas". Our current projections are for up to 35 biomethane sites to connect by 2026, but there is still uncertainty around incentives and funding arrangements which will have a major impact on financial viability.

We now have 19 green gas connections with a maximum connected capacity of 1,757 GWh/year, which is enough green gas to provide heat to approx. 150,000 homes. We have two to three further sites expected to connect in 2021.

2.7.2 Environmental

In year output	Deliverable	Units	FP Target	2019/20	2018/19	2017/18	2016/17	2015/16	2014/15	2013/14
Environmental	Shrinkage	GWh	409	340.0	351.5	371.5	378.5	381.1	394.8	417.4

8 year forecast	Deliverable	Units	FP Target	2019/20	2018/19	2017/18	2016/17	2015/16	2014/15	2013/14
Environmental	Shrinkage (leakage)	GWh	398	320.3	332.1	350.4	357.9	363.0	376.0	398.0
	Provide biomethane connections information	Total Connected capacity (KWh)	✓	200,543	129,792	123,292	108,125	86,125	35,208	5,400

Our primary impact on the environment is gas lost to atmosphere during transportation through our network.

Utilising pressure control systems and reinforcing our network we actively manage system pressures down to a minimum and therefore also minimise emissions. We invested heavily in pressure control systems in previous price controls, saturating our network where it could be justified through cost benefit analysis. This investment has significantly benefited today's consumers.

We performed this work in advance of the other GDNs and have therefore already realised the opportunity which those other GDNs still have to further reduce emissions through installing new control systems.

Therefore, for us mains replacement is the most significant contributor to reducing emissions, delivering over 90% of the reduction in RIIO-GD1 to date. This equates to a reduction of 536,000 tonnes of carbon dioxide equivalent (CO_2e) saved over RIIO-GD1 to date, and a total of 680,000 tonnes CO_2e forecasted to be saved over the current pricing period. Without mains replacement we would fail to meet our emissions targets.

A further aspect of our role in the environment is in supporting wider decarbonising strategies. We now have 19 DN entry sites connected to our network, one within Wales and the remainder in the South West. These sites produce 'green gas', for use by our customers, having a direct impact on their decarbonisation without the need for expensive works within the homes.

These sites have the capacity to supply over 150,000 domestic homes with heat, a contributor towards the Government's 2020 renewable heat targets.

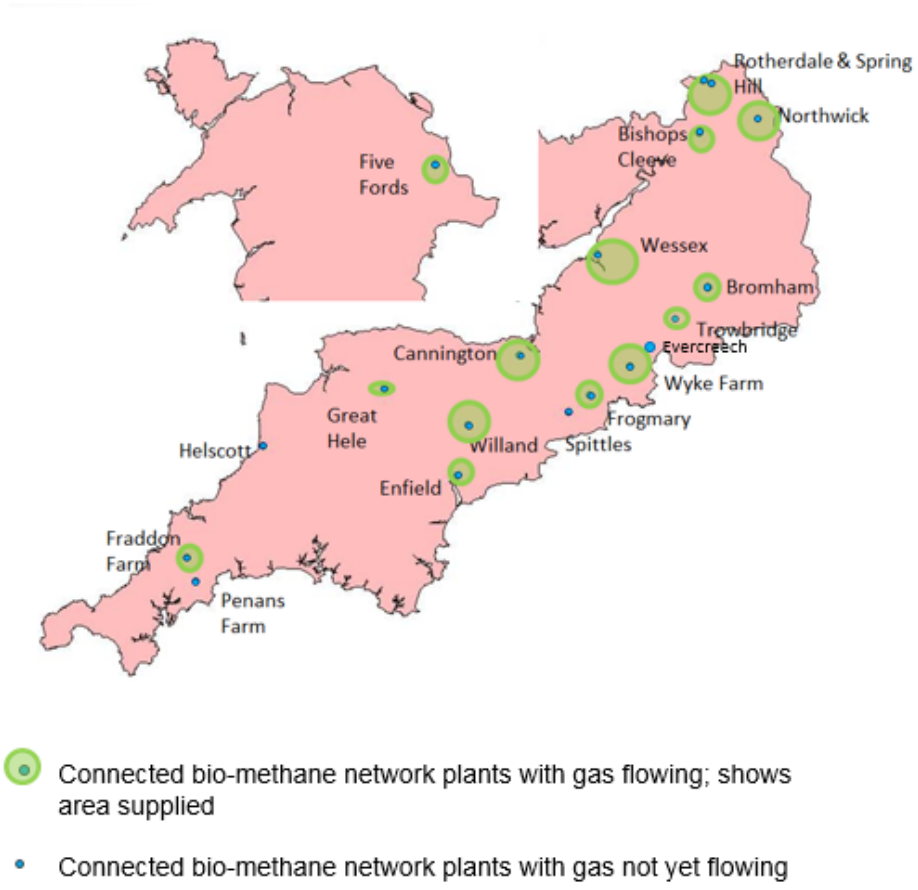
Uncertainty on future biomethane connections has been introduced by the changes to the Renewable Heat Incentive (RHI) scheme. However, we continue to work with potential entry customers to support and encourage this growth which we believe is a positive development in the future viability of the energy network.

Our support of new flexible generation plants and changes to the contracts with existing power stations means that power can be generated on a more flexible basis by power stations within our network. This is supporting the decarbonisation of the power grid by ensuring that intermittent sources can be accommodated with no risk to the reliability of those networks.

We are also proud of our environmental achievements and again maintained certification to ISO 14001:2015 Environmental Management System standard. By utilising and developing industry-wide best practices, we have reduced our environmental impact. Key areas of focus have been reducing our carbon emissions that contribute to climate change, the reduction in disposal of waste to landfill and the use of quarried stone for reinstatement. Protecting the environment is a key focus for us going forward, and we are constantly looking for ways to minimise the environmental impact of our past, present and future activities.

2.7 Performance Against Primary Outputs

Figure 1 showing location and relative size of connected sites within our region



2.7.3 Social

8-year forecast	Deliverable	Section Ref	Units	FP Target	GD1 to date	Forecast to end of GD1
Social obligations	Fuel Poor Connections	8.1.9	No.	12,590	10,673	12,590
	Carbon Monoxide awareness	8.1.10	Increase awareness	✓	✓	✓

Vulnerable Customers

We are fully committed to supporting the most vulnerable and fuel poor across our geography. Our core duties are to identify people in vulnerable situations who could be impacted by our works by using the Priority Service Register (PSR). We referred 11,652 people to our PSR in 2019/20 compared to 4,227 people in 2018/19. This increase followed the launch of our Facebook social media campaign with targeted messages and adverts. We take our obligations to provide alternative heating and cooking and free alterations very seriously, and have invested in nine Customer Support Officers to be the key contacts for customers during our major works.

We also deliver many services which have been developed working with stakeholders and third parties over the last 4 years. We are currently working with partners including:

Partnership	Delivery of services
Care & Repair (Cymru and some SW England)	PSR sign ups and CO monitors to over 65s
Fire & Rescue Services (All 7 agencies in our area)	PSR sign ups and CO monitors to vulnerable households
CSE, Bristol	Referrals from our engineers of vulnerable households for financial, tariff and energy advice
Warm Wales	Healthy Homes, Healthy People (previously named Community Energy Champion project) – income maximisation, energy bills and debt, energy efficiency advice and measures, safeguarding, PSR and CO
Warm Wales, British Gas, Flintshire Council, NEST team, QERB and City Energy, Yorkshire Energy Services, and Arbed am Byth	Ofgem approved fuel poor partners
Teignbridge, Rent Smart Wales and Swansea Council	We supported bids for the final rounds of the Warm Homes Fund This work will be delivered primarily in 2020/21, but some work may carry over into the first year of RIIO-GD2.

Fuel Poor Connections

We completed 952 Fuel Poor Scheme connections, but also funded 139 connections undertaken by a third party Utility Infrastructure Provider (UIP) as part of a UK wide programme of works for a large Housing Association. This means that we funded a total of 1,091 connections in 2019/2020, this compares to 1,083 in 2018/19.

2.7 Performance Against Primary Outputs

WWU has achieved a six-year total of 10,673 fuel poor connections towards an eight-year output target of 12,590 connections. As of the end of March 2020 we had a programme of 2,300 connections with organisations that would allow us to hit our RIIO-GD1 target.

WWU has been working with many organisations across our network to link up with our FPNES funding for heating systems and other efficiency measures. We have delivered 417 connections under the Arbed Phase 3 schemes in the Flintshire area over three schemes with one requiring 2.8km of new mains.

The Welsh Government NEST scheme continued during 2019/20, but with a lower gas connection workload of 74 homes.

The Warm Home Fund projects have delivered single connections and some community schemes. Notable projects in Plymouth (Raglan Road) and Cheltenham (Kempton Grove) are partly complete and will conclude in 2020/2021.

Carbon Monoxide awareness

Stakeholders continually place raising the awareness of carbon monoxide (CO) as a high priority for our business. Feedback from a range of stakeholders said we should make sure we target CO awareness and alarm installation to those most at risk. As a result, last year:

- 4,732 CO alarms were distributed
- 3,588 (58%) CO alarms were directly installed by our partners in homes of the most vulnerable in our society as soon as they identified a vulnerability
- 98% of our CO alarms went to those most affected, the same as 2018/19
- We also rolled out the Safety Seymour initiative from Cadent in 2018, targeted at Year 2 pupils, and through our 15 Gas Safety Ambassadors delivered the programme at 50 schools have reached more than 2,700 children in 2019/20.
- We jointly ran the CO Schools safety competition in 2019 with over 700 entries. One of our KS2 entry for the south west has received the national prize. We've had a national winner for four years running.

In addition, one pupil who received the Safety Seymour training in Caerphilly was recognised in the Pride of Britain awards with a Child of Coverage award. Jaydee-Lee Dummett recognised the signs of CO poisoning when her four-year old brother awoke disorientated in the night.

Tackling fuel poverty Healthy Homes Healthy People (HHHP)

We launched the Community Energy Champions (CEC) project in partnership with our fuel poor partner, Warm Wales in 2017/18. This has been rebranded Healthy Homes Healthy People.

Warm Wales agents offer a range of advice on debt and benefits, home and personal safety, tariff switching, energy efficiency and health and wellbeing. They identify 'hard-to-reach' vulnerable and fuel-poor households through Foundation Data for Robust Energy Strategies (Fresh) mapping, which layers data on poor health, poverty, poor housing and over-65s so we know where we need to focus our resources. By working closely with health professionals, we are seeing an increasing number of referrals of individuals into this scheme.

Different approaches have evolved in south Wales, north Wales and Cornwall, working with key support services in local authorities and helping lift people out of fuel poverty in ways other than simply providing a gas connection. The outcomes for 2019/20 were as follows.

2019/2020	Savings £	Total no. households assisted	Average saving per household
South Wales	£278,899	369	£756
North Wales	£151,640	186	£815
Cornwall	£121,400	233	£521
Severn Wye	£14,384	69	£208
Totals:	**£566,323**	**857**	**£661**

In addition, we referred a number of customers to the Centre for Sustainable Energy. 49 homes were provided with help that resulted in savings of £25k in total and an average of £514 saving per household.

Increasing access to Priority Services Register (PSR) support

Stakeholders have told us that the PSR is vital to ensure we can proactively identify vulnerable customers and safeguard them during our works. A report we commissioned by Mindset highlighted the lack of knowledge of the PSR by individuals, carers and health workers. We have been focusing our partners on signing up individuals, and in addition have attended Occupational Health worker conferences across our network to spread the word about the PSR for gas, and other utilities to encourage them to sign people up, and whilst also ensuring we share our data with water and electricity companies as well as the gas suppliers.

In May 2019 we launched a Facebook social media campaign with targeted messages and adverts. As a result, we referred 11,652 people in 2019/20 compared to 4,227 people in 2018/19. We have plans to revamp the social media campaigns in 2020/21 to further increase our reach and the number of sign-ups.

2.7 Performance Against Primary Outputs

2.7.4 Customer

In year output	Deliverable	Section Ref	Units	2019/20	2018/19	2017/18	2016/17	2015/16	2014/15	2013/14
Customer Service	Planned work survey	7.3.5	Score of out of ten	8.83	8.80	8.74	8.62	8.72	8.68	8.59
	Emergency response repair survey	8.1.8	Score of out of ten	9.56	9.56	9.53	9.55	9.55	9.44	9.14
	Connection survey	8.1.8	Score of out of ten	9.13	9.18	9.19	9.17	8.88	9.01	8.34
	Overall score		Score of out of ten	9.17	9.18	9.15	9.11	9.05	9.04	8.69
	Complaints metric	8.1.8	#	2.48	2.51	2.80	2.83	4.43	6.93	7.39
	Stakeholder engagement	8.1.8	Metric score	5.55	5.43	5.00	6.00	6.05	7.05	6.30

Customer Satisfaction

We scored 9.17/10 for overall customer satisfaction this year in the Ofgem surveys. This is small decrease on the 9.18 scored in 2018/19. Planned work saw an improvement in scores from 8.80 to 8.83 with our Customer Support Officers and nominated team members providing face to face customer contact before, during and after the works. This was recognised externally by the IGEM Customer Service awards in 2019 with an award to WWU and MUS, our contract partner.

The Emergency score at 9.56 continues to be the best GDN score for the 6th year in a row, ranking first in every question on the survey. The Connections score of 9.13 was lower than the 9.18 from 2018/19, but 2nd highest GDN score of all networks.

Emergency & Repair 2019/2020	WWU	E of E	London	N West	W Mids	Southern	Scotland	Northern
SURVEY QUESTIONS				Year to Date				
Q2 – Time to get through to operator	9.51	9.41	9.18	9.46	9.42	9.40	9.36	9.46
Q3 – Info & safety advice	9.52	9.48	9.23	9.51	9.48	9.44	9.41	9.48
Q5 – Time for engineer to attend	9.56	9.52	9.29	9.55	9.56	9.44	9.49	9.49
Q9 – Restored asap	9.34	9.07	8.38	9.19	9.09	8.96	9.23	9.14
Q10 – Communication during work	9.35	9.19	8.54	9.26	9.21	9.10	9.29	9.15
Q11 – Site Tidiness	9.61	9.49	9.16	9.47	9.46	9.43	9.55	9.52
Q12 – Reinstatement of excavations	9.46	9.31	8.79	9.24	9.27	9.21	9.41	9.30
Q13 – Skill & professionalism of workforce	9.64	9.55	9.22	9.55	9.51	9.44	9.58	9.54
Q14 – Overall quality	9.60	9.53	9.14	9.53	9.50	9.41	9.56	9.51
Q15 – Overall satisfaction with service	9.56	9.49	9.08	9.49	9.47	9.39	9.53	9.48

We have continued to have our customer service independently evaluated by the Institute of Customer Service (ICS). At the end of 2019, we achieved a customer satisfaction score of 93/100 for our whole business, considerably higher than the utility sector benchmark of 73.3 and the all-sector benchmark score of 77.4. The report from the ICS following a visit in February 2020 said:

"It became clear from the start that Wales & West Utilities think, live and breathe customer service – both for external and internal customer"

Our complaints metric score is 2.48 this year compared to 2.51 last year (the lower the better and Ofgem's target is <11.57 to avoid a penalty payment). Our complaints resolution performance of 84% of complaints resolved within 24 hours was the same as 2018/19 but we improved our D+31 and repeat complaints performance. For the 11th year in a row, we had no Ombudsman findings made against us.

The total volume of complaints remained very low at 1,549 compared to 1,515 in 2018/19 across 267,000 customer contacts, so a rate of 0.6%. Our replacement works accounted for 834 of these complaints with communication issues and time off gas being the key root causes. We have several initiatives ongoing to improve this with our continued investment in Customer Support Officers engaging with customers face to face key to this.

Inclusive Service Provision

We have maintained our British Standard for Inclusive Service Provision (BS 18477) in 2019/20. The November audit looked at our whole business Some minor non-conformances were recorded and are being addressed ahead of the 2020 audit.

Guaranteed Standard of Performance

We also performed well above the benchmark performance for all Guaranteed Standards of performance (GSoP). We have continued to pay double the statutory payments where we provide a poor service to a customer as well as ex-gratia good will payments, even in cases where we have not failed the GSoP definition.

In summary, we have had a very successful year improving the experience for our customers which has been reflected in our Customer Service metrics. We continue to drive outstanding service and there are many initiatives on the horizon which we anticipate will further improve our performance in the next regulatory year and beyond. A key component of this is our upgrade to the C/4 SAP CRM product in readiness for RIIO-GD2. This will be complimented by a new field force system and enhanced integration with the SAP S4 Hana product.

2.7 Performance Against Primary Outputs

Interruptions.

Our average planned interruption time for 2019/20 was 172 minutes compared to 171 minutes in 2018/19. We achieved a 96% performance in getting customers reconnected within 24 hours, and ensured we safeguarded any who were off gas for a longer period.

Our performance in unplanned interruption times is equally good. In 2019/20, our average interruption time was 355 minutes compared to 356 minutes in 2018/19. These times represent significantly shorter periods without gas, benefiting the customer and their overall satisfaction with WWU as a customer focused business.

2.7.5 Reliability

8 year forecast	Deliverable	Section ref	Units	8 year FP target	8 year forecast
Reliability	Duration of planned supply interruptions	7.3.5	Millions of minutes	≤92	73
	Duration of unplanned interruptions	8.1.6	Millions of minutes	≤45	39
	Number of planned supply interruptions	7.3.5	#	≤451,235	343,711
	Number of unplanned supply interruptions	8.1.6	#	≤90,169	70,079
Reliability (network capacity)	Achieving 1 in 20 obligation	6.1.4	Capacity booked	✓	✓
Reliability (network reliability)	Maintaining operational performance	6.1	To maintain	✓	✓

The Ofgem Mid Point Review of interruptions targets concluded in 2017/18 with Cadent, NGN & SGN having targets reset to a lower number. WWU was the only GDN which chose not to resubmit targets as part of the Mid Point Review of interruptions. We are committed to our original challenging targets and intend to deliver these within RIIO-GD1 rather than weaken these targets.

We continue to use live insertion where appropriate which minimises disruption by being able to undertake work without isolating supplies and therefore keeping the consumer “on gas” for longer (as it only requires one interruption whereas other techniques require two). We have sought to share this practice with the other gas networks to help identify if other networks could utilise this technique further which we continue to see as a key success in the way we manage our Repex programme.

The 2019/20 winter saw severe weather conditions for a brief period of just a few days. This placed the network under significant stress for a short period of time with such conditions not seen since the winter of 2010/11. The high demand and extreme temperatures tested both the network in terms of supply and our winter preparedness in terms of staff response. All gas demands were met and despite the significant disruption Repair and Emergency standards were achieved for the 2019/20 period, validating the pre-planning that had taken place

2.7.6 Safety

In year output	Deliverable	Ref	2019/20	2018/19	2017/18	2016/17	2015/16	2014/15	2013/14
Safety (management of repairs)	GSMR 12-hour escape repair equipment	8.1.4	✓	✓	✓	✓	✓	✓	✓
	Management of repairs (repair risk)	8.1.4	✓	✓	✓	✓	✓	✓	✓
Safety (major accident hazard prevention)	GS(M)R Safety case acceptance by HSE	6.1.1	✓	✓	✓	✓	✓	✓	✓
	COMAH safety report reviewed by HSE	6.1.1	✓	✓	✓	✓	✓	✓	✓
Safety (emergency response)	97% Controlled gas escapes attended in 1 hour		✓	✓	✓	✓	✓	✓	✓
	97% Uncontrolled gas escapes attended in 1 hour		✓	✓	✓	✓	✓	✓	✓

8 year forecast	Deliverable	Section Ref	Units	2019/20	2018/19	2017/18	2016/17	2015/16	2014/15	2013/14	8 year forecast
Reliability (network capacity)	Achieving 1 in 20 obligations	6.1.4	Capacity booked	✓	✓	✓	✓	✓	✓	✓	✓
Reliability (network reliability)	Maintaining operational performance	6.1	–	✓	✓	✓	✓	✓	✓	✓	✓
Safety (mains replacement)	Iron mains risk reduction (based on MPRS)	7.3.1	Risk reduction	✓	✓	✓	✓	✓	✓	✓	✓
	Sub deducts networks off risk	8.2.4	#	✓	✓	✓	✓	✓	✓	✓	✓

We continue to make sure colleague and stakeholder safety remains top of our agenda, and that we have rigorous safety systems and processes and a commitment to continuously improve our record.

2.7 Performance Against Primary Outputs

Royal Society for the Prevention of Accidents (RoSPA)

As may be expected of a company like ours, safety is, of course, our number one priority. The RoSPA Awards are among the most prestigious in the sphere of health and safety.

We were awarded the RoSPA Gold Award for our health and safety performance again in 2020; this is our seventh such award in a row. No other UK gas network has achieved this and we are immensely proud of the success. This message of safety achievement is a welcome reassurance to the people, organisations and interest groups who rely on us for a high quality and very safe service. In 2020 we were very pleased to win the RoSPA Oil and Gas Sector Award for the second successive year

International Standard ISO 45001 – Occupational Health and Safety Management Systems – WWU was certified to OHSAS 18001 which is to be superseded by a new international standard ISO 45001 over the next three years. Following the latest re-certification inspection conducted by the accrediting organisation SGS in October 2019 WWU is delighted to be fully certificated for the next three years until 2022. WWU was the first GDN to achieve this accreditation in 2018.

Keeping people safe

We have robust systems to deal with a major loss of gas supply, understanding our stakeholders want to see us reviewing and testing those systems regularly. Work continued though 2019/20 to further develop WWU's internal response. We continued to test and develop a solution to capture data in the field from both WWU and non-WWU engineers on the status of the gas supply for our customers and people in vulnerable situations during a Local Gas Supply Emergency (LGSE). This allowed us to produce reporting to facilitate the effective management and communication by WWU of a LGSE. This was tested during WWU's own internal and national exercises and best practice was shared among the other GDNs at industry forums.

We have continued working with other gas networks to review; further develop the self-isolation and restoration cold weather model and update the risks associated with customer self-isolation and restoration during a gas outage. This has involved exhaustive external independent review of the supporting data. Furthermore, the impact of the Covid-19 pandemic has provided another opportunity for WWU to work collaboratively and develop a support tool for risks associated with our engineers visiting properties and potentially catching the Covid-19 virus and / or passing the virus on to other people may be greater than the risk posed by customer self-isolation and restoration.

3

Totex Cost Summary

In this section:

3.0 Totex Cost Summary

Introduction

In delivering the Outputs and innovation described within this document we have incurred the costs set out in this section.

The current RRP tables detail RIIO-GD1 actual expenditure into separate Opex, Repex and Capex categories. Outputs delivered are generally specified on separate RRP tables with no, or limited, linkage to the associated cost information.

Section 5 provides the analysis of our Totex spend by asset class/output, which in our view provides a more informative understanding of costs incurred.

As an illustration of this point, the Ofgem analysis identifies a “Capex” underspend of £6.2m for LTS and storage in 2019/20. We review the best means of maintaining the health of our infrastructure assets and consequently we have identified that the cheapest whole life solution is to perform less Capex and more Opex work, and have carried out £3.3m of “Opex” interventions specifically related to this asset category.

To properly understand our approach, and the associated cost, of maintaining the integrity of the infrastructure asset for which we are responsible, it is appropriate to review spend by asset category on a Totex basis.

In summary, without the full Totex cost analysis linked to Outputs, the headline cost variances, and hence comparisons of network performance, can be quite misleading.

Within this section we provide a high level cost analysis using the traditional Opex, Repex and Capex basis. This includes both current year and cumulative price control to date analysis.

We continue to encourage Ofgem to move to full Totex reporting, linked to specific Outputs and asset intervention activity, to facilitate a better understanding of the decisions we make to maximise intervention benefits and therefore return for our stakeholders; and in particular the trade-offs between the types of spend considered.

Unless stated to the contrary, all financial values within this report are stated in 2019/20 prices.

The summary position of actual expenditure against allowances is set out below:

		2019/20			RIIO-GD1 to date		
£m 2019/20 Prices	Section	Actual	Allowance	Variance Fav/ (adv)	Actual	Allowance	Variance Fav/ (adv)
Controllable Opex	3.2	94.1	111.4	17.3	658.7	789.7	131.0
Repex	3.3	79.5	106.7	27.2	572.2	744.0	171.8
Capex	3.4	51.1	60.3	9.2	375.6	464.4	88.9
Totex (excluding Pass through and Shrinkage)		**224.7**	**278.4**	**53.7**	**1606.4**	**1998.1**	**391.7**
Innovation costs	2.5.4	1.6	0.0	(1.6)	10.8	0.0	(10.8)
Pension Deficit payment	9.2.2	17.7	10.3	(7.4)	99.5	68.7	(30.9)
Pension admin and PPF	9.2.4	1.2	1.2	(0.0)	7.7	7.5	(0.1)
Total Controllable spend		**245.2**	**289.8**	**44.6**	**1724.4**	**2074.3**	**349.9**

No allowance/recovery of cost included for Innovation which is 90% funded by the customer through an adjustment to the maximum allowed revenue. In order to efficiently deliver the RIIO-GD1 Outputs within a Totex regime, we manage the business by asset class and output delivery rather than by type of spend.

3.1 Governance Structure

In January 2013 we implemented an updated governance structure. We operate under four committees that focus on specific operational areas of our business. Attendees at each of the four committees are from a number of different departments and across management levels.

All four committees feed into our executive committee to ensure effective overall delivery.

The four committees and a brief overview of their responsibilities are:

- Network Management – pro-active delivery of asset health across all asset categories utilising a range of timely interventions,
- Replacement – delivers the key iron mains safety risk reduction targets. Attendees include representatives from our alliance partner Morrison and Wales & West Utilities,
- Emergency and Repair – manages the reactive work required to deliver an efficient and effective emergency service and also ensure appropriate repairs to our network assets, together with connections and reinforcement; work driven by customer requests, and
- Business Operations – responsible for all other areas of Opex and Capex, notably, work management, back office (including IT, Fleet and Property) and Xoserve.

Sub-committees and Interfaces – we have a number of sub-committees and interfaces that focus specifically on key areas such as customer service, innovation and stakeholder to name a few.

The rest of this section provides some high level narrative of our Totex performance during the seventh year of RIIO-GD1 on the “traditional basis” to allow comparisons to the Final Proposals. It also shows the cumulative position against the allowances for the control period to date.

Sections 6 ~ 9 of this report provide a more detailed analysis broken out by the four Wales & West Utilities committees we use to manage our gas infrastructure and ensure regulatory compliance.

Continuous improvement – we continue to look at the way we operate the business and how we could make it more efficient. Utilising our staff and resources across activities and departments is a key focus area. Following trials conducted towards the start of the price control some key results that have been embedded are:

- Use of a single manager to effectively manage the Mains Replacement programmes in North Wales allowing for the delivery to be more effective and efficient.
- An element of the emergency workforce is now competent to support network maintenance activities which increase the productivity of the workforce and allow us to meet the maintenance workload demands.
- Network services have resources trained in key areas across the network to assist with the demand on the emergency workforce through peak workload periods. This also allows for further support on emergency activities while Smart Metering workload is completed.

The training of network services resources to assist our emergency department became a reality in the winter of 2017/18 when the “Beast from the East” was upon us enabling us to draw on the additional trained resources to ensure standards and the reliability of the gas supplies were maintained throughout the period.

3.2 Controllable Opex

£m 2019/20 Prices	Link to Committee structure	2019/20 Actual	2019/20 Allowance	2019/20 Variance Fav/(adv)	RIIO-GD1 to date Actual	RIIO-GD1 to date Allowance	RIIO-GD1 to date Variance Fav/(adv)
Work management	9.1.1	21.9	23.6	1.8	144.7	165.7	21.0
Emergency	8.2.1	8.9	17.8	8.9	72.3	124.8	52.4
Repair	8.2.2	9.8	14.0	4.3	69.6	103.4	33.8
Maintenance	6.2.17	17.5	14.5	(3.0)	126.8	101.2	(25.5)
Other direct activities (exc Xoserve)	9.1.2	4.1	2.7	(1.4)	26.4	17.0	(9.4)
Voluntary severance & other staff management	9.1.3	0.0	0.0	0.0	19.2	0.0	(19.2)
Xoserve	9.1.4	2.3	2.4	0.2	26.5	34.0	7.5
Holder demolition	6.2.16	0.0	0.6	0.6	3.1	4.2	1.1
Land remediation	6.1.12	0.2	3.1	2.9	9.0	16.7	7.7
Business support	9.1.5	23.5	27.2	3.7	136.1	185.4	49.3
Training & apprentices	9.1.10	6.1	5.1	(1.0)	25.0	34.4	9.4
Sub-deducts	8.2.4	0.0	0.4	0.4	0.0	2.8	2.8
Total Controllable Opex		**94.1**	**111.4**	**17.3**	**658.7**	**789.7**	**131.0**

Controllable Opex increased year on year by £8.1m, in constant prices. We underspent the allowance by £17.3m in the year.

A number of the key cost increases for the year on year movements are explained by the following:-

- Covid-19 costs of £0.5m for under-utilised direct labour resources stranding back into Opex from Repex and Capex due to the shut-down of non-essential works from the last few weeks of March. It is expected that significantly higher costs will necessarily strand into Opex in 2020/21 given the main impact of Covid-19 is being seen in that year. This stranding is after WWU taking all reasonable action to minimise the level of costs incurred, without resorting to utilising UK Government support measures. Such measures were not utilised given the regulated nature of our revenues, which we expect to be largely unaffected by the impact of Covid-19. In addition, we worked with Ofgem in early 2020/21 to help support those smaller shippers who requested support, and therefore their customers, through deferred payment terms.
- Increase of £1.0m in RIIO-GD2 business plan preparation costs for headcount and specialist consultancy work.
- Training & Apprentice costs increased by £1.6m as we ensured a constant resource across the network to be able to manage the workload

The outperformance against allowance was partly achieved by ongoing savings as a result of:

- The introduction of Working Time Solutions in December 2012 to our operational workforce, which has optimised working patterns and reduced the ongoing overtime bill.
- Continued significant changes to reactive leakage workload as a result of the continuing unseasonably warm weather, with reduced external materials, reinstatement costs and direct labour time, allowing us to utilise industrials on more planned work whilst also reducing unproductive time.
- Utilisation of FCO's – Training all of our first call operatives (FCOs) to carry out Smart Metering Non Formula work transferred FCO labour time from our base emergency costs along with the utilisation of FCO's on replacement and capital activities providing lower costs for our customers.
- Settlement of property charges with National Grid property followed successful negotiations resulted a released accrual of £0.7m in the year in 2018/19.

3.3 Repex

£m 2019/20 Prices	2019/20 Actual	2019/20 Allowance	2019/20 Variance Fav/(adv)	RIIO-GD1 to date Actual	RIIO-GD1 to date Allowance	RIIO-GD1 to date Variance Fav/(adv)
Mains replacement programme	70.4	99.7	29.2	506.4	690.4	184.0
Multi-occupancy buildings	1.9	0.4	(1.4)	14.3	4.0	(10.2)
Sub-deducts	0.0	0.4	0.4	0.1	2.8	2.7
Relay following escape	7.1	6.2	(0.9)	51.4	46.7	(4.7)
Repex	**79.5**	**106.7**	**27.2**	**572.2**	**744.0**	**171.8**

We had a successful seventh year of RIIO-GD1, building on our performance in the first six years, in the management of our mains and services population. We delivered on our promises whilst driving efficiency and thus benefiting consumers. We aim to continue to deliver our stakeholder driven outputs through effective decision making, innovation and a focus on efficiency.

We have significantly driven down mains replacement delivery costs in the seven years of RIIO-GD1 through a number of innovations, some of which enable enduring efficiencies, others sustainable only in the short term. In 2019/20 the cost incurred for Repex activities was £79.5m against an allowance of £106.7m.

The main reason for our outperformance in GD1 has been the favourable alliance contract that we secured. The following factors enabled us to achieve a low contract price and beneficial contract rates:

- A long price control period: In 2013 we were able to enter into an eight-year alliance contract, which was only possible because of the eight-year RIIO price control period. This provided our alliance partners certainty about workloads over a longer period; it also allowed us more of an opportunity to negotiate and to lock in a lower contract cost.
- More flexible pipe selection criteria: Greater flexibility provided a short-term opportunity to design schemes that were significantly larger than had been possible previously. This was reflected in the rates we were charged, and allowed us to benefit from the following:
  - ❖ Using larger teams in smaller geographical areas – the success of the five/six-person team model during the first half of GD1 improved operational efficiency and produced a level of performance beyond our forecasts.
  - ❖ More efficient support functions – larger teams delivering larger quantities of work in a small geographical area can be serviced more easily by support functions. For instance, logistics support functions have fewer projects to service and there is less travel time between sites. Reinstatement teams can also have a higher number of excavation pits in one geographical location.
  - ❖ Lower mobilisation/demobilisation costs – larger and fewer schemes reduce the significant cost of safe mobilisation and demobilisation of sites. In the remainder of GD1 scheme sizes will fall as will team sizes, whilst the number of schemes will increase – with a resulting impact on our cost base.
  - ❖ Lower management to team ratio – operational and safety management are most efficient when team sizes are maximised and the number of schemes that are in progress are kept to a minimum. The change in the design constraint allowed us to achieve this balance. Now these schemes have been depleted we are seeing a fall in the size of our teams with a related increase in scheme numbers – moving back to a similar profile as in GDPCR1.
  - ❖ A favourable labour market: Our mains replacement programme benefited from a reliable and consistent workforce for several years before contract negotiations; the labour rates in our fixed contractual pricing reflected this. In the past few years, however, this landscape has changed significantly, and labour rates are continuing to increase. This is being driven predominantly by competition with other GDNs and other capital programmes (including in the water, electricity, nuclear, telecoms and transport sectors). This is explored further in section 5.

As a result of securing a favourable Alliance contract, our business and our customers continue to be protected from adverse market conditions and to benefit directly from our commercial arrangements.

However, as has been demonstrated by the exit of one Alliance contract partner in 2018/19, and the Pain receivable due from our remaining contract partner for 2019/20, this is not a sustainable position and will not be sustainable once the contract expires at the end of GD1. The other contributing factors above will not continue in the remainder of GD1 and into GD2.

We have worked hard to apply an innovative approach to the management of our workforce to ensure delivery of our mains replacement programme while planning for succession into the future. During the year we continued to experience significant turnover of contractor resource due to other GDNs offering above market rate deals to our workforce to enable them to recover their Repex programmes. This has resulted in disruption to our programme and has the potential to impact delivery within RIIO-GD2.

To reduce the influence of other GDNs on our performance in the coming years, we have continued the implementation of a Resource Strategy introduced during 2018/19 to recruit graduates and apprentices and by more general upskilling of the current workforce for supervisor and technician roles. In 2018/19 and continued into 2019/20 we also recruited over 150 new employees across the network to sustain and increase our delivery capacity, including more than 40 new employees in the Cornwall area to deliver our large programme of work in that county. The costs of training, mobilization and upskilling of these staff has been at a significant cost to us and our alliance partners in the year 2019/20.

We are continuing to experience adverse cost pressures as previously reported:

- The opportunity to design larger mains replacement projects is becoming exhausted. In the future we will see project sizes reduce significantly and the number of main to main connections we will undertake will be higher on a “per metre” basis. Consequently we expect lower outputs from our delivery teams and more frequent mobilisation and demobilisation of projects. Aligned with this we expect a reversal of the cost reductions made in support services such as grab lorries, pick-up trucks and reinstatement costs.

3.3 Repex

- Remuneration demands from the resources we have managed to retain or train continue to increase.
- In 2019/20 and for the remainder of this price control we are delivering a mains replacement programme consisting of more 8″ mains and Tier 2 mains, resulting in the abandonment profile consistent with that included in our RIIO-GD1 Business Plan and subsequently the Final Proposals.

Our Alliance partners are incentivised by a KPI suite which includes financial risk and reward mirroring our regulatory commitments. These include, but are not limited to:

- Primary Output – level of Risk Removed;
- Total Mains Replacement length;
- Completion of 8″ mains abandonment within Tier 1 programme; and
- Completion of Tier 2 and Tier 3 mains abandonment.

3.3.1 Metallic service replacement

Our approach to management of services provides an appropriate balance of risk and cost benefit analysis (CBA) and is as follows;

- Replacing all steel services when the parent main is replaced,
- Delivering a bulk service replacement programme based on a 'hotspot' analysis of metallic service failures,
- Replacing steel services when they are found to be leaking or have visible condition issues that indicate a high probability of failure, and
- Cutting off services found to be no longer in use.

This approach to the management of services is supported by the HSE and, with the exception of the detailed hotspot calculation, is consistent across GDNs.

The table below shows the number of services forecast to be intervened on in GD1 vs the Final Proposal numbers.

	RIIO-GD1 forecast	FP Allowance	Variance
Metallic (Relays)	159,980	210,329	(50,349)
PE (Transfers)	129,216	132,102	(2,886)
Total services worked on	**289,196**	**342,431**	**(53,235)**

There is no financial betterment to us through the change of ratio of transfers to relays. Whilst relays are more expensive than transfers the difference is marginal with excavations, time on job and overhead being very similar for both types of work.

In making decisions about where to direct our investment we must balance safety, ongoing operating expenditure, environmental impacts, and the relative efficiency of delivery. As we have previously outlined to Ofgem, we select projects that deliver the greatest benefit to customers. This process has resulted in a shortfall in the number of metallic services we have relayed, when compared with our Final Proposal targets.

We agreed with Ofgem that we would continue to focus our resources on reducing and managing risk in the most efficient way. For example, our Multi-Occupancy Buildings (MOBs) programme goes far beyond the Final Proposal allowances.

3.4 Capex

£m 2019/20 Prices	Section	2019/20 Actual	2019/20 Allowance	2019/20 Variance Fav/(adv)	RIIO-GD1 to date Actual	RIIO-GD1 to date Allowance	RIIO-GD1 to date Variance Fav/(adv)
LTS & storage	6.2.1	7.8	13.9	6.2	65.2	114.1	48.9
Mains reinforcement	8.2.5	7.4	10.6	3.2	34.1	74.1	40.0
Governors	6.2.10	2.1	3.6	1.6	14.0	24.7	10.7
Connections	8.2.12	14.4	11.7	(2.7)	88.8	80.8	(8.0)
IT	9.1.6	9.3	6.9	(2.4)	57.7	47.5	(10.2)
Xoserve	9.1.4	0.0	(0.0)	(0.1)	9.1	6.5	(2.5)
Vehicles	9.1.11	5.0	6.4	1.4	36.8	41.0	4.2
Other Capex	9.1	5.2	7.1	1.9	70.0	75.7	5.7
Capex		**51.1**	**60.3**	**9.2**	**375.6**	**464.4**	**88.8**

The following sections briefly outline the key drivers to the variances against the allowances.

3.4.1 LTS and Storage

The lower than allowed spend is a result of the following key points:

- Effective Totex intervention decisions to undertake an increased level of non-routine Opex refurbishment, a total for 2019/20 of £1.4m, contributing towards the £6.2m underspend on LTS Capex.
- By continuing to utilise an innovative solution for nitrogen sleeve end-seal replacement (rather than wholesale relay) we have now realised a seven year cost efficiency giving a lower whole life cost to the end user whilst still delivering network capacity and reliability Outputs. We completed refurbishment of a further nitrogen sleeve in 2019/20 and to date have restored the integrity of 25 sleeves in total.
- Further reductions against anticipated spend can be attributed to an alternative approach to maintaining the integrity of our pipeline network, in that we continue to implement an “As Low As Reasonably Practicable” (ALARP) methodology in assessing options available to us to identify the most cost effective method of minimising the societal risk associated with pipelines, specifically targeting high consequence areas.

To manage pipelines in this way requires high quality data and analytics. As reported last year, to support this we have re-digitised our entire high pressure pipe network (2,360km) into short sections to better assess consequence of failure. This has enabled very detailed assessment of risk for each of the 10,785 pipeline sectors, taking into account people, property and infrastructure in the vicinity of each pipeline section.

This will achieve the greatest risk reduction for the minimum expenditure in preference to wholesale replacement of pipelines.

3.4.2 Mains reinforcement

As we continue to see growth in housing, WWU has seen the growth in reinforcement of the network. This is mainly from the domestic market, but we have also experienced a large number of requests for peaking generation sites resulting in additional reinforcement required. Although we aim to reduce the need for expensive open cut reinforcement solutions we have seen a marked increase in the length of network reinforcement required. We have used a number of innovative solutions including renegotiation of agreed pressures on the network, replacement of iron and steel to allow network pressure elevation and combining design and delivery to ensure the cheapest cost options are put forward.

3.4.3 Governors

The £1.6m lower Capex spend than the allowance of £3.6m in 2019/20 is the result of our effective strategy of an increased level of refurbishment resulting in a lower Totex cost whilst delivering the same reliability output illustrated by overall average health and risk.

The district governor intervention plan for 2019/20 resulted in wholesale capital replacement of 11 governors, a further 12 have been purchased along with the associated planning and design ready for installation in 2020/21 and we’ve completed capex refurbishment of a further 40 governors. This has been driven by their Health and Risk indices as determined from the Condition Based Risk Management (CBRM) model and taking account of the recently developed Monetised Risk models (e.g. NARMs).

The net effect on the average overall Health Index of the district governor population previously reported is a slight deterioration from 2018/19 to 2019/20 and a marginal increase in overall Risk Index over the same period – this is in line with the committed Outputs for this asset group for this price control.

We remain on target to deliver our Outputs over the RIIO-GD1 period as reported against the common NARMs methodology.

3.4.4 Connections

The net Capex for Connections in 2018/19 was £14.4m, which is £2.7m higher than the allowance. The increase in cost is due to a change in the mix of workload delivered. Further detail is contained within Section 8.2 Connections.

3.4.5 Other Capex

Spend in the year was £1.9m lower than the allowance of £7.1m. The details of actual expenditure for the Other Capex categories are covered within the commentary for the Business Operation Committee.

3.4 Capex

3.4.6 Cost pressures

We continue to face external cost pressures both in terms of availability and cost of the skilled workforce and the materials, products and services which we require to complete our essential work:

- In terms of our skilled workforce, we are expecting the recent turbulence in the labour market to continue, leading to increasing delivery costs within our sector. Resulting from other GDNs striving to bring their Repex programmes back on track. Further afield, outside the GDNs, we are facing pressure from other competitive sectors including nuclear, telecommunications, water, smart metering, rail and electricity as their workloads increase.
- HS2 has created over 150 gas diversions, putting pressure on the availability of qualified resources in the UK.
- The approval of Hinckley Point has created localised inflation as the nuclear industry looks to ramp up investment in the SW of England.
- The rollout of the national Smart Metering programme has resulted in additional network costs being incurred. This is expected to increase as the programme develops.
- The introduction of the Apprentice Levy has increased payroll costs by 0.5%. We are trying to recover what we can on this through the training of our apprentices along with upskilling other employees as appropriate.
- Recent low oil prices have helped achieve our outperformance of the allowance over the first few years of the RIIO-GD1 price control. However, external forecasts indicate that these low prices will not be sustainable in the future. There are already signs of increases, the obvious example being the increase in fuel pump prices to over £1.32/litre during 2019/20.
- The recovering economy is starting to drive up prices as general demand within the economy increases.
- Whilst little impact has been seen to date, the Brexit vote in favour of Great Britain leaving the EU is also adding to future uncertainty. Future impacts may include:-
  - ❖ Reduced immigration leading to increased demand for scarce labour resources,
  - ❖ EU Legislation ceasing to apply in Great Britain and its replacement with alternative domestic legislation.
  - ❖ Increased cost of purchases from Europe Stock Market and property market impacts affecting RPI and pension valuations.

The full impact of Covid-19 pandemic on costs and workloads within WWU has yet to be fully realised and has created a level of uncertainty.

To help mitigate these cost pressures we have engaged in a number of specific activities, these include;

- The South West procurement hub to utilise the combined purchasing power of utility businesses in Wales & South West England.
- Leveraging the combined purchasing power of the wider group of companies in the UK with common shareholder interests. Operating across utility sectors and across the UK.
- Market testing of all controllable costs over 3-5 year programme of procurement events.
- Utilising framework contracts and mini-competition events to drive lowest cost solutions for the majority of the work we outsource.
- Identifying alternative sources of supply for materials and products, including overseas sourcing.
- Giving our Repex contractor workforce longer-term visibility of the projects available to them, to encourage stability and a longer term working relationship built on mutual trust.
- Maintaining, since our inception in 2005, a largely insourced operating model, providing resource stability and enabling retention of corporate experience and knowledge.
- Continuing with our apprenticeship programme, which we started in GDPCR1, to ensure skills levels are maintained in line with workload for the future.
- We are bringing innovative solutions and techniques to fruition. We are constantly sourcing new technologies to ensure an efficient, safe and reliable delivery programme.
- We are also reviewing our delivery model to review the possibility of a more efficient structure for organising and performing our work.
- We have good working relationships with the trade unions with focus on an insourced resource model.
- Increasing workload programmes to offset the risk of losing key resources in the future. We face significant issues with workforce being attracted to similar companies offering higher pay in the short term.

Whilst we will continue to mitigate cost pressures where we can, we expect costs to grow at more than inflation in the future.

4

Totex Cost Summary: How we manage the network

In this section:

4.0 Totex Cost Summary: How we manage the network

To demonstrate how we manage on a Totex basis, we set out below a summary table across the four committees under which we operate.

The totals in the table below and those in section 3 above are identical. The spend within each of Opex, Repex and Capex has been regrouped by operating committee to better reflect how we manage the network.

2019/20 Totex £m (2019/20 Prices)	Section	Actual cost				Allowed cost				Var
		Capex	Repex	Opex	Totex	Capex	Repex	Opex	Totex	Fav/ (adv)
Network management	6	9.8	0.0	17.7	27.5	17.6	0.0	18.2	35.7	8.2
Repex	7	-	72.3	-	72.3	-	100.1	-	100.1	27.8
Emergency & repair	8	21.8	7.2	18.6	47.6	22.4	6.6	32.2	61.2	13.5
Business operations	9	19.5	0.0	57.7	77.2	20.4	0.0	61.1	81.4	4.2
Totex		**51.1**	**79.5**	**94.1**	**224.7**	**60.3**	**106.7**	**111.4**	**278.4**	**53.7**

The Totex performance for the RIIO-GD1 price control period to date, in constant 2019/20 prices, is:

Cumulative Totex £m (2019/20 Prices)	Section	Actual cost				Allowed cost				Var
		Capex	Repex	Opex	Totex	Capex	Repex	Opex	Totex	Fav/ (adv)
Network Management	6	79.1	0.0	138.9	218.0	138.8	0.0	122.2	260.9	42.9
Repex	7	-	521.2	-	521.2	-	694.5	-	694.5	173.3
Emergency & Repair	8	122.9	51.0	141.9	315.8	154.9	49.6	231.0	435.5	119.6
Business Operations	9	173.5	0.0	377.9	551.4	170.7	0.0	436.5	607.3	55.9
Totex		**375.6**	**572.2**	**658.7**	**1,606.4**	**464.4**	**744.1**	**789.7**	**1,998.1**	**391.7**

5

Forecast

In this section:

5.1 Opex Forecast

5.1.1 Opex Cost Forecast

Forecast costs (2019/20 Prices) £m	2014 Actual	2015 Actual	2016 Actual	2017 Actual	2018 Actual	2019 Actual	2020 Actual	2021 F'cast	Forecast RIIO Total	2018/19 view
Work Management	26.2	22.9	23.1	21.8	20.8	19.4	22.0	23.9	180.3	180.7
Emergency	11.3	11.7	10.0	10.6	10.5	9.4	8.9	8.2	80.6	79.7
Repair	11.1	11.2	9.5	10.8	8.3	8.9	9.8	7.7	77.3	75.1
Maintenance	16.3	20.2	19.1	19.4	16.3	18.0	17.5	15.8	142.6	142.1
Other Direct Activities	22.0	15.3	7.6	7.4	7.2	5.8	6.4	6.8	78.5	76.7
Total Direct Opex	87.0	81.3	69.3	70.0	63.1	61.4	64.6	62.5	559.2	554.3
Total Indirect Opex	20.7	20.1	23.7	24.2	19.1	24.6	29.5	35.9	197.9	201.1
Total Opex	107.7	101.3	92.9	94.3	82.2	86.0	94.1	98.4	757.1	755.5
2018/19 view	107.7	101.3	92.9	94.3	82.2	86.0	93.8	97.1	755.5	180.7

The forecast costs reflect the following:-

- Repair workloads forecast in line with the deterioration assumptions and profile of mains replacement over the remainder of the eight year period.
- Increased investment in enablers such as more reliable vehicles and better tooling has increased productivity levels.
- As productivity levels of direct labour resources increase availability of those resources increases allowing them to pick up additional Mains Replacement & Capital workloads; reducing the need for external resources. This reduces unproductive costs in Opex.
- The forecast reflects an improved succession plan, taking into account retirees, apprentice intake, different pension arrangements and grade changes.
- Updates to management initiatives and new processes are reflected in both the actual costs and in the forecast i.e. Working Time Solution benefits.
- The forecast takes into account any updates in external costs i.e. Xoserve.
- We have not included any additional costs at this stage for the rollout of Smart Meters, due to continued uncertainty over timing and involvement.
- As the economic climate improves (subject to the impact of Covid-19), we expect to see wage and contractor rates increase, noting that customers have benefited from suppressed rates during the economic downturn.
- Covid-19 impacted on operational productivity in March 2020.

Metering and Smart metering work

Since its creation in 2005, WWU has maximised non-regulated meter work to minimise the inevitable amount of unproductive time created by having to respond to a PRE anywhere across the large geographic network, within which we operate. Until 2008 most of this work was delivered through contracts with OnStream and National Grid Metering ("NGM"). In 2008 the OnStream contract went to tender and WWU's bid was unsuccessful. However, the NGM metering work across both domestic and non-domestic sectors has remained our core metering activities and added valuable income to the business.

This has enabled us to keep the critical mass of First Call Operative required to maintain a safe, efficient network 24 hours a day, 365 days a year.

Over the years the changes in the metering arena have seen the workload provided by these contracts reduce as events such as, metering competition and more recently Smart Metering, have eroded the volumes available via the contract with NGM.

Originally, the Government target for the completion of the Smart Metering rollout was 31st December 2020. However, this has now been extended to 2024. Up to the end of March 2020 about 39% of Traditional Meters have been replaced by Smart leaving approximately 1.5 million traditional gas meters to be exchanged within the WWU network by the end of 2024.

To mitigate the impact of this reduction, which is still forecast to disappear in 2020, we successfully bid for a Smart Metering contract with National Grid Smart (NGS) which finished in July 2019 having installed our first Dual Fuel Smart Meter in December 2016. The ability to install and maintain electricity and gas Smart Meters gives us the ability to deal with Smart Meters into the future.

There are multiple benefits in obtaining this work over and above the obvious ones of improving efficiency and offsetting the stranded cost increases associated with the disappearance of Traditional Meter work.

- Nationally there is expected to be a significant shortage of gas engineers, to deliver this work, and it is forecast that there will need to be over 10,500 additional gas engineers at the peak of the Smart Meter rollout programme. We have skilled and experienced gas engineers who can assist in delivering the Smart Metering targets, both gas and electric, within the UK.
- The work will also give us an in-depth knowledge of the issues created by Smart Meters, as well as increasing the knowledge and understanding of our engineers, when it comes to giving advice to customers regarding things like energy efficiency and the use of In Home Display (IHD) units.

The introduction of Smart Metering will be confusing for some customers and we will, without doubt, be the first call to many of these issues. We are committed to making sure our First Call Operatives can deal with as many of the customer concerns as possible and maintain our reputation for delivering outstanding levels of Customer Service.

5.1 Opex Forecast

5.1.2 Opex Workload Forecast

The forecast workloads are shown below;

Forecast workload	2014 Actual	2015 Actual	2016 Actual	2017 Actual	2018 Actual	2019 Actual	2020 Actual	2021 F'cast	Forecast RIIO Total	FPs
Opex										
Mains condition reports	5,636	6,424	5,569	6,421	6,052	4,889	4,761	6,073	45,825	71,694
Service condition reports	6,317	5,417	5,943	5,621	5,249	5,929	5,772	6,245	46,493	37,518
No. of holders removed	2	7	1	–	–	–	2	–	12	c. 7-8

Mains reports are below the level in Ofgem's Final Proposals with service reports being higher than Final Proposals. Forecast numbers are based on an average winter severity. So far, this control has seen exceptionally mild winters resulting in lower than forecast repairs. We estimate a severe winter could add at least 2,000 mains repairs and 1,000 service repairs to our workload. Whilst report numbers are used in preference to repair numbers in table 2.3, our view remains that repairs are a better measure as many people can call in one escape but the repair drives the cost.

We have accelerated and exceeded the requirements for holder demolition with 12 delivered to date against a target of 7-8 over the whole control. The opportunity to remove more risk on this group was taken following a review of ongoing Opex costs, safety risk and the opportunity for an efficient delivery programme. We have not found risk to be as high as expected on other asset groups following survey results (e.g. Service governors) so the decision was made to invest in the holder programme.

5.2 Repex Forecast

5.2.1 Repex Cost Forecast

Forecast costs (2019/20 Prices) £m	2014 Actual	2015 Actual	2016 Actual	2017 Actual	2018 Actual	2019 Actual	2020 Actual	2021 F'cast	Forecast RIIO Total	2018/19 view
HSE driven mains & services	**74.5**	67.0	63.7	64.3	55.4	62.2	60.6	70.0	517.6	**528.3**
Non-HSE driven mains & services	**7.0**	17.8	20.1	18.2	14.5	15.9	17.0	8.2	118.7	**112.4**
Risers	**1.7**	2.8	2.4	2.1	1.5	1.8	1.9	1.1	15.4	**15.8**
Total Repex	83.2	87.6	86.3	84.6	71.4	79.9	79.5	79.3	651.7	**656.5**
2018/19 view	**83.2**	**87.6**	**86.3**	**84.6**	**71.4**	**79.9**	**82.5**	**81.0**	**656.5**	

Forecast Repex costs reflect the following areas that impact on expenditure levels:

- Continued delivery of our key Iron Mains abandon targets utilising our existing alliance contract. However, 2019/20 has seen a significant cost spike which, under this contractual mechanism, is putting our ongoing contractual relationship under strain. This follows the exit of one partner in 2018/19.
- The cost of delivery is impacted by the size and type of project that we can efficiently design in any one year to meet our risk targets. To deliver significant customer benefit in the last three years, we have been able to target the most efficient size projects however this continues to decrease.
- We are continuing to experience labour market rate demand increases and are balancing costs with retaining experienced resource in a competitive sector including water, electricity and rail. A significant investment in new recruits to offset this labour market has come at a significant investment cost in the year as these learn on the job from other experienced teams and begin to become productive.
- Introduction of innovative products are now reflected in our forecast such as ductile iron cutting tool, mobile apps and single flow stopping equipment. This is mitigating some of the cost pressures we expect to see in the future.
- Work will become more dispersed in future years and we will start to incur a higher delivery cost in terms of both support and delivery costs.
- Our current insertion ratio following design is better than we have historically achieved but analysis shows this will drop for the remainder of this programme to 2032 and will have an adverse impact on the cost of the mains replacement programme moving forward.

Continued focus on efficient delivery, which supports the on-going outperformance.

5.2.2 Repex Workload Forecast

Forecast workload	2014 Actual	2015 Actual	2016 Actual	2017 Actual	2018 Actual	2019 Actual	2020 Actual	2021 F'cast	Forecast RIIO Total	FPs
T1 length decommissioned	333.4	365.7	345.1	337.4	299.1	306.8	315.6	349.9	**2,653.0**	2,638
T2 length decommissioned	21.7	21.5	20.9	30.9	30.1	25.0	48.0	39.1	**237.0**	237
T3 length decommissioned	1.4	1.7	0.8	1.1	1.0	0.3	-	0.5	**6.7**	1
Steel length decommissioned	64.8	66.8	100.3	84.6	69.9	62.0	59.4	63.1	**571.0**	571
Other length decommissioned	28.5	25.3	8.9	17.1	17.6	15.2	19.1	18.7	**150.5**	56
No. of services transferred	19,750	20,361	17,308	17,354	14,043	12,934	13,605	13,861	**129,216**	132,102
No. of services relaid	22,851	23,770	21,642	23,268	18,083	17,146	16,700	16,520	**159,980**	210,329

- We plan to deliver the Repex programme as per FPs, exceeding length targets in some categories. As we deliver this programme we replace all metallic services and transfer all PE services encountered. As can be seen in the table above, the relays and transfers are not as forecast and we explain this in detail in the Repex (section 7) of this document.

5.3 Capex Forecast

5.3.1 Capex Cost Forecast

Forecast costs (2019/20 prices) £m	2014 Actual	2015 Actual	2016 Actual	2017 Actual	2018 Actual	2019 Actual	2020 Actual	2021 F'cast	Forecast RIIO Total	2018/19 view
LTS, storage and entry	**9.8**	7.2	12.6	10.1	7.9	9.9	7.8	9.0	**74.3**	75.3
Connections	**11.9**	10.8	13.3	12.2	13.3	12.9	14.4	13.6	**102.4**	100.4
Mains Reinforcement	**4.4**	4.0	3.8	3.9	4.8	5.8	7.4	7.5	**41.6**	36.3
Governors (Replacement)	**2.6**	2.4	2.7	1.8	1.0	1.3	2.1	2.6	**16.5**	16.5
Other Capex	**30.2**	24.7	22.3	24.9	25.2	26.7	19.5	26.5	**200.0**	203.5
Total Capex	58.9	49.0	54.7	52.9	52.4	56.5	51.1	59.1	**434.6**	**432.1**
2018/19 view	**58.9**	**49.0**	**54.7**	**52.9**	**52.4**	**56.5**	**56.4**	**51.4**	**432.1**	

The forecast Capex costs reflect the following areas that impact on expenditure levels:

Continued delivery of our key reliability outputs targets, adjusting them where appropriate for changes to workload assumptions, e.g. fuel poor connections.

- Connections service workload is expected to increase in 2020/21 - The unit cost of delivering the fuel poor connections is expected to rise as we need to do more work to promote the fuel poor schemes and gather evidence of eligibility face to face rather than as a desktop exercise.
- Specific reinforcement workload (pipes) is forecast to continue to a similar level as 2019/20, with a small movement of specific reinforcement using governors into 2020/21. Specific reinforcement will also be required to support some of the small gas fired power stations as well as CHP plants at Industrial sites, District Heat networks around our network, and biomethane injection points. Continued implementation of the ALARP methodology for LTS pipelines which has reduced capital costs.
- Continued investment in a programme to replace boilers which have reached the end of their asset life with new efficient boilers and this will also reduce our ongoing Opex costs i.e. taking a Totex approach.
- PSUP has reduced from 2018/19 onwards following completion of the security upgrade projects by the end of December 2018 subject to one camera repair needed at Gilwern. This is outstanding due to the lead time on parts needed.
- Updated detailed asset plans specifying size and location of installations/refurbishments allowing greater accuracy for future years planning.
- Continued focus on efficient delivery which supports our on-going outperformance.

5.3.2 Capex Workload Forecast

Forecast workload	2014 Actual	2015 Actual	2016 Actual	2017 Actual	2018 Actual	2019 Actual	2020 Actual	2021 F'cast	Forecast RIIO Total	FPs
Total mains reinforcement (km)	11.3	13.4	9.8	12.6	17.5	22.8	18.9	24.8	**131.0**	200.0
Total reinforcement Governors (#)	–	–	4	–	1	1	–	2	**8**	128
Total connection services (#)	11,498	11,294	11,640	11,933	11,074	10,857	10,227	11,370	**89,893**	98,060
– New housing services (#)	2,898	3,595	3,878	4,463	4,370	4,097	4,109	3,843	**31,253**	21,355
– Existing housing services (#)	5,381	5,508	5,563	5,235	4,998	5,086	4,461	5,012	**41,244**	59,760
– Non- domestic services (#)	587	530	640	639	655	591	566	598	**4,806**	6,145
– Fuel poor services (#)	2,632	1,661	1,559	1,596	1,051	1,083	1,091	1,917	**12,590**	12,590
Governor interventions (#)	94	90	35	24	16	14	22	8	**303**	514

- Overall reinforcement has been lower than forecast during 2019/20 mainly due to small delays in site developments for housing and peaking generation sites. This has moved a small proportion of workload into 2020/21, and therefore increased the forecast for next year. Where possible we have reduced mains installation workload and costs by using innovative solutions such as network reconfiguration, combining and isolating part of networks, CSEP renegotiation and pressure management.
- Reinforcement lengths have been less than forecast in the early years of RIIO-GD1 but have returned to the forecast levels in the last few years. This is a result of the steady recovery in the housing market and an increase in connections of small peaking power plants. These 'peakers' are required to balance supply and demand on the electricity network with the increase in intermittent wind and solar generation. We continue to engage with DNOs to understand the future requirement for peakers and ensure the overall energy network is optimally balanced with storage on the gas network enabling intermittent green energy generation on the electricity network.
- Connections workload is clearly customer driven and is forecast to be lower than final proposals. The forecast service fuel poor number is dependent on customers who qualify for the warm house assistance programme being able to access funding.

The governor intervention forecast only includes Capex replacement. Our Totex intervention plan for governors is also focused on Capex refurbishments and Opex life extensions. As such, a simple count of the Capex work vs FP is not an indication of the delivery of the asset health and risk outputs. Our current forecast submitted in table 7.3 shows our Totex plan delivers the output requirement for this asset group.