Scottish Water
Trusted to serve Scotland

Delivery Plan
2015 to 2021

Trusted to care for the water on which Scotland depends

2016 to 2021

March 2016

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Overview

This update to our Delivery Plan is submitted to Scottish Ministers for approval. It highlights those areas where the content of our original Delivery Plan for the 2015-21 period has been revised.

In our 2015 Delivery Plan we stated that while the targets were very challenging, we were determined to deliver significant further improvements for our customers and out-perform our commitments.

During 2015/16 we have made a positive start to out-performing these commitments. Highlights include:

- The water we delivered to our customers' taps during 2015 has been at its highest quality level ever, at above 99.9%;
- The level of customer service we are providing, as measured by the Overall Performance Assessment (OPA) measure is at the upper end of our plan range with a forecast outturn of 391 to 397;
- We introduced our household Customer Experience Measure in April 2015 to ensure that the delivery of service to our customers continues to sit at the heart of what we do and be a key driver of our performance. We agreed with the Customer Forum to improve on the score of 82.6 (out of 100) and we are forecasting an improved score of over 84 as we continue to reduce the number of complaints we receive and increase the customer satisfaction of the service delivered.
- Our customer satisfaction score as measured by the Institute of Customer Service is at a record level. We continue to maintain our leading position within the UK water industry and we are among the leaders across the wider economy in the provision of essential products and services;
- We have been recognised as Scotland's Best Large Employer and accredited as a Living Wage Employer; and
- We are outperforming the challenging financial limits for 2015/16 set out in the Final Determination 2014 and forecast a closing cash balance in March 2021 of £62 million compared to our 2015 Delivery Plan position of £40 million.

This update to our Delivery Plan builds on our success to date and remains as ambitious - to provide our customers a leading service while at the same time reducing their charges in real terms.

There are significant financial uncertainties at present, so our plan has taken a cautious view, particularly around inflation and additional risks to the investment programme. Nonetheless, by delivering out-performance and through positive overall favourable factors outside of our control we are forecasting that we can accommodate the costs of the Ayrshire strategic resilience scheme that we launched this year and substantial potential increases in the cost of meeting discharge consents to the River Clyde within the financing set out in the Final Determination 2014.

We have revised the borrowing profile for 2015/16 and 2016/17 as advised by the Scottish Government with the planned £760 million net new borrowing being provided over the last four years of the period.

In preparing for the 2015-21 investment programme we made significant and substantial changes to our operating model and procured new supply chain arrangements. We have taken the opportunity to assess and better understand the risk profile in the programme, to review our output delivery profile with the Output Monitoring Group, and to agree challenging but realistic and achievable overall delivery profiles. These proposed revised delivery profiles are included in Sections 3 to 5.

With our Vision of being 'Trusted to care for the water on which Scotland depends', we remain determined to deliver significant further improvements for our customers through our approach to putting them and their communities at the heart of the business and generating further out-performance. Any further financial out-performance will enable us to manage risks and discuss with stakeholders and the Scottish Government how that out-performance could be utilised to the benefit of our customers.

In finalising our updated Delivery Plan, we have met with the Regulators to ensure that they are aware of the changes to our original plan.

1. Delivering for our customers

Our plan will, at a minimum, maintain the high service levels that we are delivering and we will further improve services in areas identified as priorities by customers. During 2015/16 we have focused on driving down unwanted customer contacts and complaints and driving up customer satisfaction. To support this, we are implementing a new Customer Relationship Management system to further improve communication channels with customers.

Maintaining service to customers during extreme weather events

Most of our customers never experience an interruption to the services they receive and rightly trust that this will continue. Scotland experienced a period of extreme weather events over December 2015 and January 2016 which caused a significant number of our assets to be impacted by severe flooding, access restrictions, power loss and communication failures. Fifteen drinking water systems and more than one hundred waste water systems were affected. Incidents have ranged from flooding of a raw water pumping station supplying 230,000 customers in Aberdeen, to a waste water treatment works in Hawick which was flooded seven times.

Our priority during such events is to ensure that any disruption of services to our customers is avoided, or kept to a minimum. Due to robust proactive contingency planning, rapid and effective response procedures and the commitment of our staff and supply chain partners, the recent extreme weather events were managed with minimal inconvenience to our customers.

Employee engagement

We have a strong and committed workforce with a diverse range of skills and talents. Everyone plays a vital role across communities in demonstrating that we are trusted to care for the water on which Scotland depends. We are committed to engaging our employees and monitor how well we are doing through regular employee opinion surveys.

In 2015, we won the prestigious Business Insider Award for Scotland's Best Large Employer, receiving external recognition for our commitment to create a highly engaged workforce, provide opportunities for all, supporting work-life balance and having strong values and ethics. We received official accreditation as a Living Wage Employer in November 2015.

Below we set out updates on the key high level customer service metrics that we monitor our performance by.

Overall Performance Assessment (OPA)

In our 2015 Delivery Plan we set out our commitment to achieve an OPA score at, or above, the threshold for leading water and waste water companies, (380 points in 2015/16 rising to 385 points by 2020/21), and our aspiration to be best in class, achieving an equivalent OPA score at, or above, 400 points.

As a result of our continued focus on delivering high levels of customer service we are on track to exceed the 2015 Delivery Plan commitment and be close to our aspiration to be ‘best in class’, with a forecast outturn of 391 to 397 in 2015/16.

We understand that SEPA is proposing changes to its Compliance Assessment Scheme which could impact on the waste water treatment compliance component of the OPA calculation. We are working with SEPA to ensure that performance for OPA and serviceability are measured on a basis that is consistent with the way that our 2015 Delivery Plan targets were set.

Customer Experience Measure (CEM)

We introduced our household CEM in April 2015 to ensure that the delivery of service to our customers continues to sit at the heart of what we do and be a key driver of our performance.

Recognising the relative immaturity of this measure within Scottish Water, we set out in our 2015 Delivery Plan our aim to improve on the score of 82.6 (out of 100). We are forecasting an improved score of over 84 for 2015/16 as we continue to reduce the number of complaints we receive and increase the customer satisfaction of the service delivered. We are determined to achieve further improvement during the period.

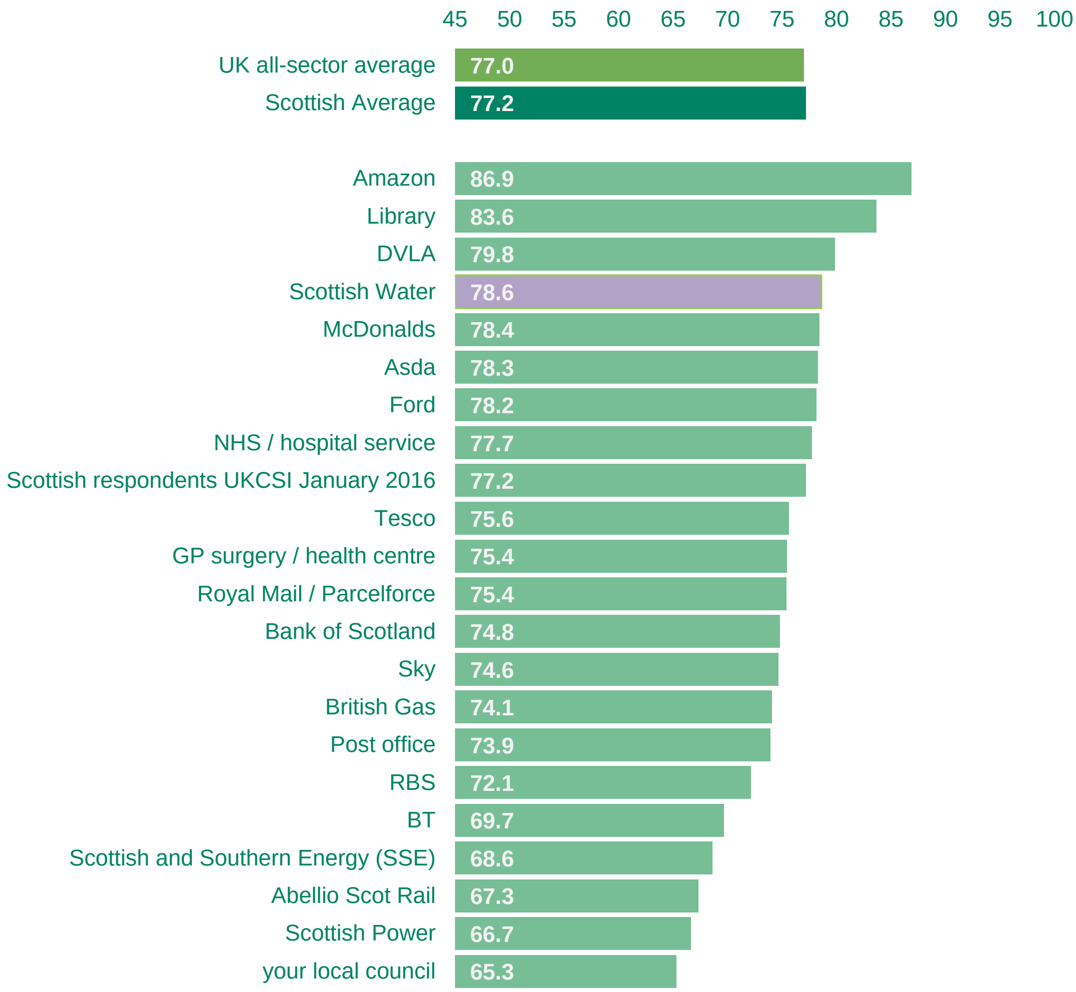
We are continuing to develop a separate Customer Experience Measure that will allow us to focus on improving the service and experience to our non-household customers. We are working with Licensed Providers operating in Scotland to establish a water industry wide business-end-user survey. This will allow us to propose a baseline score during 2016/17.

High Esteem Test

We agreed with the Customer Forum to build a benchmarking comparison which would track customer satisfaction of Scottish Water alongside other companies in other sectors using the UK Customer Satisfaction Index (UKCSI) survey from The Institute of Customer Service. Our aspiration is to match the levels of customer satisfaction of leading providers of essential goods and services.

The January 2016 UKCSI results confirmed we continue to maintain our leading position within the water industry and we are starting to meet our aspiration of matching the levels of customer satisfaction of leading providers of essential goods and services, as shown in Figure 1.

Figure 1 – UK Customer Satisfaction Index (UKCSI) - Scottish survey results, January 2016



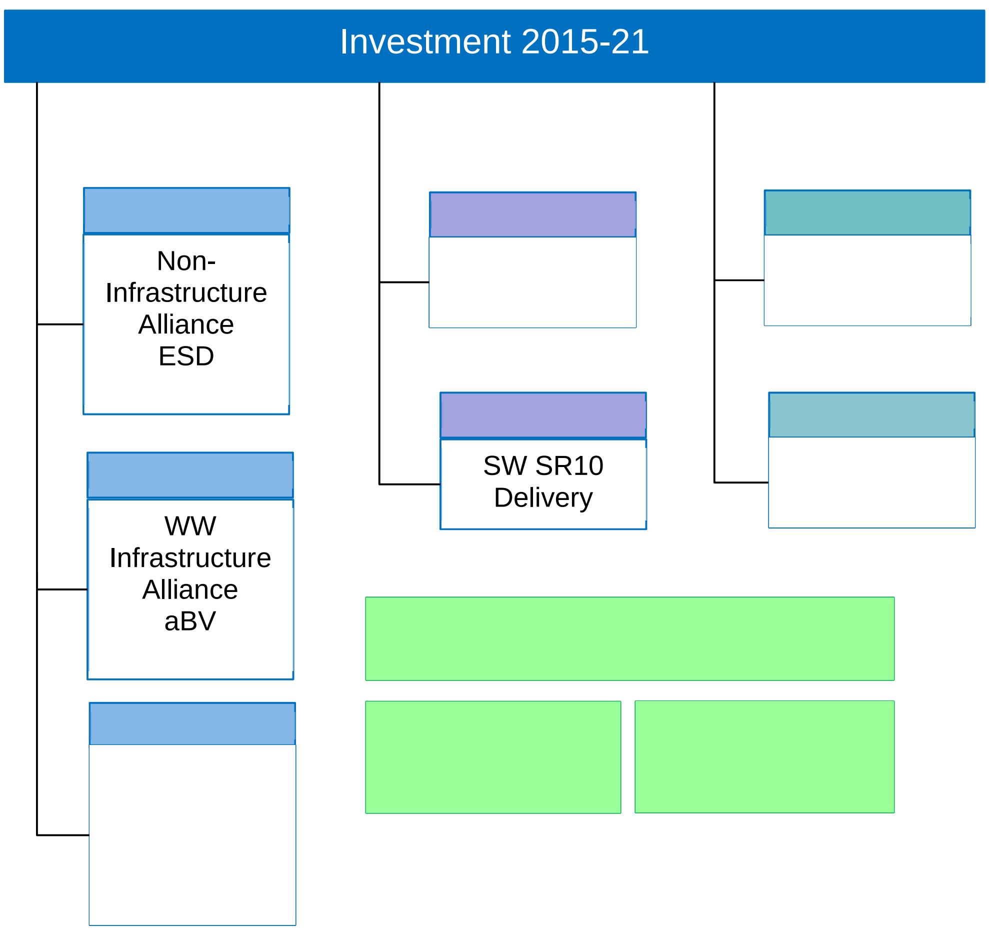
2. Delivering our investment programme

This section highlights only those areas where the content of the 2015 Delivery Plan has been revised.

Investment delivery arrangements for the 2015-21 period

We are now delivering our £3.7 billion investment programme. To achieve this, we developed and progressed the procurement of our new tailored supply chain. We have established three new alliances and are working in partnership with them to deliver both the maintenance and improvements required to our existing assets to deliver Ministers' objectives and improvements in drinking water quality and the environment. Our capital delivery arrangements for the 2015 to 2021 period are shown in Figure 2 below.

Figure 2 – Capital delivery arrangements for the 2015 to 2021 period



Our Alliances are:

Caledonia Water Alliance (CWA): a partnership of Morrison Utility Services and Aecom, is our water infrastructure alliance partner. They are responsible for the delivery of construction projects to improve our water supply networks. This will involve replacing water mains that frequently burst and lining our older pipes to improve the quality of the water that passes through them. We are committed to building resilience into our water network and as a result CWA will also be building new large diameter cross country trunk mains.

aBV Alliance: a partnership of Black and Veatch and Amey, is our waste water infrastructure alliance partner. They will be responsible for construction projects to improve our waste water networks. This will involve replacing old sewers that block and cause both internal and external flooding of properties. They will also construct storage tanks and screens to improve our sewer overflows - ensuring the environmental quality of our burns, rivers and coastal waters continue to improve.

Efficient Service Delivery (ESD): a joint venture between Galliford Try, MWH Treatment and Black and Veatch, is our non-infrastructure alliance partner. ESD will oversee the delivery of projects including work on reservoirs, water treatment works and pumping stations, which will help build on the significant improvements made to water services for the benefit of our customers in recent years.

While the majority of the design and construction will be delivered 'in house' by all the Alliances, they will also be supported by a small number of smaller 'Tier 1' contractors. These contractors will also support our in-house Managed Delivery vehicle to construct non-complex capital maintenance projects.

We have also developed rural frameworks which will allow us to work with around 58 smaller contractors to ensure delivery of improvements to our assets at a local level. Our aim is that these frameworks will sustain local employment opportunities, improve the sustainability of smaller construction businesses and support local economies.

Around 90% cent of Scottish Water's spend is through Scottish based suppliers, with 79% of our supply chain being SME businesses.

Review of output delivery

In building for the future, we made significant and substantial changes to our operating model and procured new supply chain arrangements. These changes included closing down the Scottish Water Solutions 2 joint venture, moving to new alliancing arrangements for delivery and bringing in-house the early stages of project and programme development. These changes were made in response to developing a better understanding of the risk profile in the programme, arising from the experiences during previous periods and having studied closely the enablers of capital efficiency.

As a result, delivery during 2015/16 has been slower than expected, largely as a result of:

- the additional time taken to promote projects to delivery through our new Intervention Definition Process to ensure they have been scoped correctly;
- the time taken to establish new investment processes and delivery partners; and
- delivery forecasts that did not incorporate sufficient allowance for risk; for example the challenges of working in urban areas such as Glasgow.

We have taken the opportunity to review our output delivery profile with the Output Monitoring Group and agree challenging but realistic and achievable overall delivery profiles. These proposed revised delivery profiles are included in Sections 3 to 5.

As our supply chain is now in place and fully mobilised, delivery momentum will continue to build throughout 2016. After the first year of the 6 year period we have more than 40% of the investment programme underway.

Overall Measure of Delivery (OMD)

The Water Industry Commission introduced the Overall Measure of Delivery (OMD) as a single objective indicator of overall performance in delivering Ministers' objectives. In recognition of the challenges associated with an investment programme of this magnitude and complexity, programme delivery is considered to be meeting its regulatory target if the OMD score is within 2.5% of the OMD target at any given stage during the period[1].

As part of our re-profiling of output delivery, we are proposing that our OMD profile is updated to that shown in Table 1 below[2];

	2016/17	2017/18	2018/19	2019/20	2020/21
Full OMD profile (including IR18)	82	124	169	205	250
Committed OMD profile (excluding IR18)	82	124	164	195	230

Table 1: OMD profile

[1] The 5% boundary around the OMD target will be reviewed by the Output Monitoring Group during 2016/17.

[2] There are 250 OMD points for planned milestone completions by 31 March 2021. This includes 230 OMD points for confirmed milestones to 31 March 2021, and an allocation of 20 OMD points for milestones that are to be confirmed as part of IR18. On the basis of the re-baselining of delivery endorsed by the Output Monitoring Group on 24 March 2016 our revised OMD score for 2015/16 is 53 points.

Projects due to have been completed by March 2015

We have a small number of projects (37 in total) that were due for completion by 31 March 2015 but were not delivered by then. We will continue to maintain a strong focus on delivering the remaining projects from the 2010 to 2015 period to the revised profile as shown in Table 2.

Programme area	March 2017	March 2018	March 2019	March 2020	March 2021
Projects due to have completed by 31 March 2015	26 - 29	31 - 33	33 - 36	36	37

Table 2: Projects due to have completed by 31 March 2015

Community engagement

We have placed an increased focus on ensuring communities are genuinely at the heart of our business to ensure that, through meaningful and early engagement, our activities enhance communities while leaving a positive and long-lasting legacy.

Every day we carry out planned works in communities all across Scotland to maintain the levels of service to customers or to improve drinking water quality or the environment. Our work tends to involve street works or building which can have an impact not only on our customers lives, but the community overall.

In delivering our investment, we are implementing a new approach. ‘Communities at the Heart’ provides us with the opportunity to think through how our work could impact on the community, even before we start investigatory work, and to engage with the community well before we start any construction work to ensure that our plans accommodate their priorities and preferences.

Our approach includes community engagement materials that empathise with the community and their lives, such as the barrier signs we are using at the sewer flooding work in Milnathort. We also focus on the way that we leave sites tidy and restored and, better still, if we can enhance the site or environment that we leave behind.

3. Providing continuous high quality drinking water

We set out in this section the progress we have made in 2015/16, and the changes we are proposing to our 2015 Delivery Plan for providing our customers with a safe and reliable supply of drinking water.

Improving drinking water quality

The water quality we have delivered to our customers' taps in 2015 has been at its highest ever level, at above 99.9%, as a result of our continued focus on this key area.

Improvements to statutory compliance required by DWQR

We have completed our investigations at Burncrooks water treatment works which have confirmed additional treatment stages would be required to ensure reliable water quality compliance. Having considered all of the options to improve water quality, and preserve the current levels of resilience, we have identified our preferred option is to close the Burncrooks works and to supply customers from the Bankell Service Reservoir, which is supplied from Milngavie water treatment works and Balmore water treatment works. Our preferred option is supported by the DWQR. The Water Industry Commission has removed the ring-fence around the finance available in its Final Determination 2014 and we are now actively developing our preferred solution further.

Following a detailed investigation into water quality performance at Bradan water treatment works and Afton water treatment works we have agreed with the DWQR that to ensure compliance we will change the method of disinfection to control the formation of disinfection by-products. These additions to our plan will be financed from the IR18 allowance for the control of trihalomethane (THM).

Resilience

Our customers have told us that improving resilience of water supplies is a priority area for service improvement in order to reduce the likelihood of long-term interruptions to supply. Our customers also asked us to consider further the appropriate level of investment to be made in this area and the benefits this would deliver.

Recent assessment of the Ayrshire supply system has identified a need to bolster water supply resilience. To achieve this we will create a strategic connection to the Glasgow supply system, integrating it with planned water quality improvements to deliver significant improvements to more than 200,000 people and businesses in much of Ayrshire and parts of East Renfrewshire. This £120 million scheme, launched in December 2015, will involve installing 30 miles of new water mains to connect the system in Ayrshire with the Greater Glasgow area's network and removing three existing water treatment works. This will enable us to transfer water from Glasgow to Ayrshire, and vice-versa, if required and improve water quality to 56,000 customers. Also, it will enable us to provide customers with greater security of supply and minimise the risk of disruption to customers.

Leakage

We are implementing plans to reduce leakage to below 500 Megalitres per day during the 2015 – 21 period, this involves more proactive leakage detection and repair, pressure management and modulation, improvements in repair cycle times and selected mains rehabilitation. We forecast that we shall achieve a leakage rate of 490 to 510 Megalitres per day in 2015/16. We have also improved our data in the water balance calculation particularly through studies into the night time household use of water. This has given us a better understanding of our leakage levels and will allow us to target further reductions.

Water Efficiency

Our plan to increase awareness of the benefits of water efficiency to the environment and customers is progressing. Our water efficiency trial has been updated to recognise the achievements made in the 2010-15 period and how this will be put into practice in during the 2015-21 period. Our plan has three main areas of activity: engaging with our customers, improving our assets and engaging with our stakeholders. We continue to recruit customers willing to participate in the trial and to allow us to install the monitoring necessary to capture data on water usage. The learning from the trial to date is allowing us to develop our plan to provide water efficiency advice packs to 49,000 household customers in areas more susceptible to water supply shortages about the benefits to them of the efficient use of water in the home.

Drinking water quality programme: cumulative outputs profile

Table 3 below sets out our planned delivery profile of drinking water outputs[3].

	Programme area	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	Post 2022
1	Number of water treatment works made compliant with water quality standards		1	4	12	18	27	28	
2	Number of water supply zones made compliant with iron and manganese standards				35	63	78	88	
3	Water quality completion programme	2	2	6	14	19	23		
4	Number of improvements to reliability of supply (catchments and treatment works)		1	4	8	16	40	47	
5	Number of improvements to reliability of supply (networks and storage)		9	9	10	23	81	82	
6	Length of distribution mains cleaned			93	364	2,142	5,394	5,928	
7	Water supply resilience strategy and the number of improvements made.	1	3	6	9	12	18		
8	Number of zones to improve security of supply (SOSI)	1	1	1	4	6	8	11	
9	Number of improvements required to meet Security and Emergency Measures Directive requirements			79	109	260	633		
10	Reservoirs Act: Number of improvements to dams		8	9	14	28	45		
11	Number of improvements in the infrastructure of critical – reservoirs			9	9	9	56		
12	Number of water quality studies to prepare for future investment periods		45	127	229	290	326	341	
13	Number of water efficiency advice and water saving packs provided (to 2% of our customer base)			6,500	24,500	42,500	49,000		

Table 3: Drinking water quality programme – cumulative outputs profile[4]

3 Note that the output profile is subject to discussion at OMG on 24 March 2016
4 IR18 outputs will be added on once confirmed through the IR18 process in 2017/18

4. Protecting and enhancing the environment

We set out in this section the progress we have made in 2015/16 and the changes we are proposing to our 2015 Delivery Plan.

Urban Waste Water Treatment Directive

Glasgow and the River Clyde remain a major focus in our plan as we implement the outcomes of the Glasgow Strategic Strategy. This supports an integrated approach to delivery of environmental and flooding needs, recognising the hydraulic dependencies across the waste water network. Work is progressing to deliver two major tunnelling projects in Glasgow to support both environmental and flooding needs. Enabling works are nearing completion to support the 3-mile Shieldhall Tunnel and spring 2016 will see a major milestone with the launch of the tunnel boring machine, which will operate continuously for over a year.

We plan to address the discharges from Daldowie and Dalmarnock waste water treatment works in Glasgow, serving over 500,000 customers, to meet the requirements of the Urban Waste Water Treatment Directive and Water Framework Directive. Our proposed solution was to build a transfer tunnel to discharge waste water further down the River Clyde where estuary standards can be met. We have now confirmed that the original discharge point for the tunnel option is no longer viable and would lead to a significant increase in the length of the tunnel required to an alternative discharge point, and cost. As well as developing the tunnel option, we have been trialling an innovative treatment solution, and are in the process of confirming an option for progression.

We included an allowance of £67.4 million in our 2015 Delivery Plan which is ring-fenced under the seven stage process as there remain significant uncertainties regarding the solution and cost of this project. We will continue to develop a treatment option to achieve the environmental compliance required at these works within the 2015-21 period and have included an additional £100 million for further emerging risk. We continue to work with SEPA and the Water Industry Commission to ensure that the solution put in place will provide the environmental compliance required and represent best value for our customers.

Reducing flooding and pollution from sewers

Reducing flooding and pollution from sewers remains one of our customers' highest priorities and we have been making good progress on delivering our commitment to address internal flooding for those customers at highest risk, i.e. those customers with a 10% chance or greater per annum of being flooded internally. We anticipate that by March 2016 the number of properties on our 'at risk of internal sewer flooding' register will be in the range of 330 to 340. This is better than our expected level of 370 properties.

We will take pragmatic steps to achieve our aim to reduce the number of properties on the register to between 250 to 280 properties by 2021.

We have started to address internal sewer flooding for those customers who have been on our register for over 4 years. Such flooding instances tend to be costly to resolve, such as the two-year project to tackle sewer flooding in Elmvale Row, Glasgow, where 34 properties have experienced recurring problems with flooding for a number of years. The photograph shows the two underground storm storage tanks we are putting in place to the east of Elmvale Row that will pump the flood water to the downstream sewer as the storm abates.

New problems continue to be found resulting in further additions to the flooding register. For example, 11 properties in Aberdeen were added to the register during 2015/16 and whilst we have identified a potential interim solution to mitigate the impact of further flooding to these properties and remove them from the "at-risk" register, a permanent solution to increase resilience further will require significant investment and implementation timescales to resolve. An emerging sewer flooding issue in Greenock has been confirmed and will result in between 26 to 36 properties being added to the register. We are continuing to work with Aberdeen City Council and Inverclyde Council to identify the appropriate long term solution to these and other drainage issues for delivery in future investment periods.

While we are progressing with the development and implementation of long term solutions for customers with the highest risk of sewer flooding, we have continued to provide customer support through the provision of mitigation measures. We have also started to provide additional customer support through the implementation of sewer response plans that seek to be prepared for and to mitigate sewer flooding incidents resulting from heavy rainfall. Pre-event planning based on weather forecasts and flood risk probability is now a key part of an enhanced service implemented to protect customers, where possible, from the threat of flooding.

Everyone has a role to play in helping us to reduce the level of flooding from our sewers and to mitigate the risk to those customers who could experience sewer flooding. Our 'Keep the cycle running smoothly' campaign, our first national TV and radio campaign, has been running for 2 years to highlight how customer behaviour can impact on the water cycle and how they can help us provide a continuous and reliable service. Initial analysis of the results from our campaign indicates that we have seen up to a 10% reduction in the number of blocked drains and sewers. Further campaign activities are planned and monitoring of the effects over the coming years will establish the sustainable benefits that can be achieved.

Bathing Waters

We have identified with SEPA that fewer bathing water study model updates are required than envisaged in our 2015 Delivery Plan. These outputs have now been reduced from 11 to 6 by agreement with the Output Monitoring Group.

Waste Framework Directive

Following delivery of a number of projects several further needs have been identified. In particular we will deliver 3 further outputs in the 2015-21 period to upgrade facilities at 3 sludge drying lagoons. In addition to the 10 study sites, we expect to promote further study of other sites in agreement with SEPA, and this will be confirmed during 2016.

Compliance Assessment Scheme

We continue to work with SEPA to identify and deliver appropriate needs under the Compliance Assessment Scheme, and have reduced the original planned 23 outputs for improved monitoring to 20 by agreement with SEPA and the Output Monitoring Group.

Environment programme: cumulative outputs profile

Table 4 sets out our planned delivery profile of environmental outputs.[5]

	Programme Area	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
1	Number of improvements delivered to meet UWWTD: above ground works	5	7	7	18	19	22		
2	Number of improvements delivered to meet UWWTD: below ground networks	3	7	17	22	34	45	62	
3	Number of improvements started in the 2010 to 2015 period to meet UWWTD: Glasgow scheme	21	26	42	61	69	94		
4	Number of improvements to meet the Water Framework Directive	1	1	10	11	12	21		
5	Number of studies to inform the requirements of the revised Bathing Waters Directive						7		
6	Flood Risk Management Act: number of models and integrated catchment studies			22	62	123	216	218	
7	Number of studies to prepare for future investment periods			1	37	63	131		
8	Number of Sludge Management sites investigated or improved	4	8	8	8	8	8	10	
9	Develop a national strategy on the Priority Substances Directive						1		
10	Number of improvements to meet the Habitats Directive			1					
11	Number of improvements required under the Compliance Assessment Scheme				8	20			
12	Number of improvements required by SEPA and Local Authorities to reduce odour nuisance	2	2	3	5				
13	Completion programme from the 2010 to 2015 period (excluding UWWTD Glasgow scheme)	1	7	9	12	13	16		

Table 4: Environment programme – cumulative outputs profile[6]

[5] Note that the output profile is subject to discussion at the OMG 24 March 2016
[6] IR18 outputs will be added on once confirmed through the IR18 process in 2017/18

5. Supporting Scotland's economy and communities

We set out in this section the progress we have made in 2015/16 and the changes we are proposing to our 2015 Delivery Plan.

Supporting economic development

We forecast that we will provide new water and waste water connections to around 15,300 properties by March 2016.

During 2015, we established a new approach with the aim of improving the service to the development community, working collaboratively with them to support a prosperous economy in Scotland. Our new approach is to ensure that we engage early in the development planning process with key stakeholders, so that we can plan for proposed development and are better able to effectively and efficiently build the required strategic capacity in a timely manner to meet the development community's needs. We are designing and implementing further measures as we seek to improve the service to the development community.

Code of Practice

Following partnership working with Citizens Advice Scotland, our Customer Code of Practice has now been improved and simplified, using feedback from our customers to ensure that our commitments are easy to understand and transparent to all.

Community engagement

A wide range of activities have taken place during the last year working with local schools and communities in areas such as Inverness, Thurso, Edinburgh, Gretna and Stranraer. We continue to work in partnership with organisations such as local authorities and the NHS to raise awareness of how everyone can play their part to help keep the water cycle running smoothly.

Energy programme

During 2015/16, we commissioned 0.94GWh per annum and are forecasting 1.64GWh per annum of renewable capacity by the end of 2016/17, ahead of our 2015 Delivery Plan target. As a consequence we have doubled our renewable generation capacity to over 50GWh/annum since 2013 and diversified our programme to include wind, photovoltaic and combined heat and power (CHP).

We continue to investigate wider opportunities, for example extracting value from waste, and are actively involved in research and innovation projects across this area. In collaboration with SHARC Energy, we have facilitated the installation of the UK's first heat from sewage project at Borders College, which will provide 95% of heat requirements for the college campus housing some 5,500 students. We will be monitoring the success of this scheme and seek to develop this approach further.

In 2015 the Department of Energy & Climate Change (DECC) proposed a number of policy changes, including significant deterioration to the level of support tariffs for renewables. As a result, we are re-evaluating all elements of our programme to establish if they would still provide benefits for customers.

In our 2015 Delivery Plan, we outlined our plan to invest in a new advanced anaerobic digestion (AAD) facility. During feasibility studies, we identified a number of challenges facing this project, particularly with regard to the timeframe for the facility to make a financial return for our customers. The recent changes in energy policy by DECC have further undermined the financial viability of this project. Given this backdrop, we have determined that withdrawal of this project is the right thing to do for our customers. The consequence would be that the renewable programme output will be reduced to 6.5GWh/annum by 2020/21, along with the removal of the £11.2 million investment in the 2015-21 period.

By 2021 we plan to deliver a total of 2.7GWh renewable capacity but are still reviewing other schemes for viability following the recent changes in DECC policy; there remains therefore a high risk of further changes later in the period. We continue to seek financially viable schemes and will provide a final position as input into the investment review for 2018.

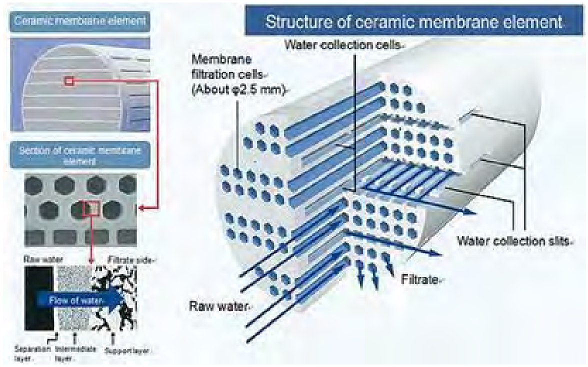
Research and Innovation

As part of a continuing stimulus to encourage and enable greater innovation, the Scottish Water Industry Innovation Panel was formed in August 2013 at the instigation of the Water Industry Commission. Under its terms of reference, the Innovation Panel set out to review the innovative approaches identified in our 2015-2021 Business Plan and to assess the extent for further opportunities for innovative approaches. We welcome the panel's findings that there is strong evidence of a positive atmosphere and motivated culture relating to innovation within Scottish Water.

We will work on the panel's recommendations and progress our research and innovation programme in the following areas:

- New technologies that reduce the economic level of leakage;
- Value generation from waste;
- Automation and real time control;
- Sustainable rural communities; and
- Trialling new technologies with our supply chain.

For example, we initiated research into technologies to replace existing membrane and media filter technologies in the future. The proposed trials will also look at upstream ion exchange and coagulation process to ensure the system can provide compliant water quality for all drinking water parameters.



Also, we are working with our subsidiary, Horizons, and other partners to identify innovative Scottish companies, particularly Small and Medium Enterprises, and support them along the innovation path from concept to commercialisation. Horizons has been developing two testing centres, one of which is at the former Gorthleck water treatment works to support this service and to offer live test-bench environments for water and waste water technologies. We are working with CREW (Centre of Expertise for Waters) and our regulatory stakeholders to explore the opportunity of a closed loop approach to the provision of water, waste and energy services for rural communities.

Supporting Scotland's economy and communities: cumulative outputs profile

Table 5 below sets out our planned delivery profile of outputs to support Scotland's economy and communities.

	Programme area	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
1	Number of connections to new households and businesses						56,500	
2	Delivery of new waste water capacity for 58,000 people						58,000	
3	Number of first time non domestic meters installed						18,000	
4	Number of wholesale meters	7,700	18,200	31,700	47,200	61,700	75,500	
5	Renewable power generation (GWh)	0.9	1.5	2.6	2.6	2.6	6.5	
6	Reduction in energy usage (GWh)		5.3	5.3	6.8	9.0	11.0	
7	Number of vulnerability assessments and monitoring improvements to support Climate Change mitigation and reduction		4	55	57	94	109	122

Table 5: Supporting Scotland's economy and communities programme – cumulative outputs profile[7]

[7] IR18 outputs will be added on once confirmed through the IR18 process in 2017/18.

6. Financing our services

The main changes reflected in this update to our Delivery Plan are:

- inclusion of the audited actual results for 2014/15;
- updated forecasts for 2015/16 and 2016-21;
- revised borrowing profile as advised by the Scottish Government;
- revised delivery profile and additional costs for the investment programme; and
- customer charges to be applied in 2016/17.

The key assumptions underpinning our financial projections are that:

- CPI inflation applied to prices for 2015/16 is 1.3%, -0.1% for 2016/17, 2.0% for 2017/18, and 2.5% each year from 2018/19 to 2020/21;
- RPI inflation applied to costs will be 1.0% for 2015/16, 2.3% for 2016/17, 3.0% for 2017/18 and 3.5% for each year from 2018/19 to 2020/21;
- RPI for costs will average 1.0% p.a. above CPI from 2017/18 to 2020/21;
- Our domestic customer base will grow by 0.74% p.a. on average while our non-household customer demand will remain stable;
- The introduction of charging for vacant properties from April 2017 will increase wholesale revenues by £15 million a year; and
- The overall charge cap for household customers remain as originally planned as 1.8% less than CPI over the 2015 to 2021 period. We are considering the impact of the proposed reform of council tax announced by the Scottish Government in March 2016.
- The wholesale cap also remains as originally planned reflecting the assumption that the underlying total wholesale revenue will increase annually by no more than 0.3% below CPI, as set out in the final determination, excluding the impact of charging for vacant properties from 2017.

Table 6 sets out our forecasts for key financial metrics. Our financial projections are presented at outturn prices.

Financial projections (HCA) Outturn prices - £m	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
Total revenue	1,119	1,122	1,157	1,183	1,206	1,228
Profit before interest and tax	**268**	**247**	**258**	**258**	**254**	**242**
Net interest payable	181	182	183	188	194	199
Profit before tax	**87**	**65**	**75**	**70**	**60**	**43**
Tax	17	13	15	14	12	9
Retained profit	**70**	**52**	**60**	**56**	**48**	**34**
Capital investment	454	580	610	669	719	720
Net new borrowing	0	0	190	190	190	190
Closing RCV	6,890	7,187	7,571	8,053	8,593	9,137
Closing debt	**3,424**	**3,424**	**3,614**	**3,804**	**3,994**	**4,184**

Table 6: Key financial projections

Financing

Revenue forecast

Table 7 sets out our forecast revenue based on the assumptions set out above.

Revenue forecast Outturn prices - £m	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	Total
Household revenue	820	836	855	874	890	905	5,180
Wholesale revenue	292	280	296	303	309	316	1,796
Other revenue	7	6	6	6	7	7	39
Total revenue	**1,119**	**1,122**	**1,157**	**1,183**	**1,206**	**1,228**	**7,015**

Table 7: Revenue forecast 2015 to 2021

Borrowing requirements

To finance the delivery of our capital enhancement programme we require £760 million of net new borrowing over the 4 years from 2018 to 2021.

Forecast costs of delivering services 2015 to 2021

Table 8 summarises the forecast financing and costs of delivering this plan over the 2015 to 2021 period.

Financing and Expenditure £m	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	Total
Customer revenue	1,119	1,122	1,157	1,183	1,206	1,228	7,015
Net new borrowing	0	0	190	190	190	190	760
Infrastructure charges income	11	13	12	14	15	17	82
Grants and contributions	17	16	5	1	0	0	39
Disposals	15	3	1	1	1	1	22
Use of cash balances	-45	164	-26	28	79	83	283
Total Financing	**1,117**	**1,318**	**1,339**	**1,417**	**1,491**	**1,519**	**8,201**
Capital investment	454	580	610	669	719	720	3,752
Operating costs	367	382	393	404	416	431	2,393
PFI contracts	154	165	170	176	182	189	1,036
Interest	151	160	162	168	175	181	997
Change in working capital	-9	31	4	0	-1	-2	23
Total Expenditure	**1,117**	**1,318**	**1,339**	**1,417**	**1,491**	**1,519**	**8,201**

Table 8: Financing and expenditure 2015 to 2021

Our assessment, in outturn prices, of the overall cost of delivering our plan is £8,201 million during the 2015 to 2021 period. We will finance this with revenue from customer charges of £7,015 million, net new government borrowing of £760 million, utilising £283 million of opening cash balances and £143 million from infrastructure charges, customer contributions and asset disposals.

Capital investment

Our forecast investment profile for the 2015 to 2021 period is shown in Table 9.

Capital Expenditure Profile (£million)	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	Total
Sustaining existing high service for customers	253	278	280	281	293	295	1,680
Enhancement 2015-21	102	151	183	209	217	221	1,083
Sub total (2012/13 prices)	**355**	**429**	**463**	**490**	**510**	**516**	**2,763**
Nominal inflator (RPI)	1.059	1.084	1.116	1.155	1.196	1.238	
Sub total (nominal prices)	**374**	**465**	**515**	**566**	**609**	**637**	**3,166**
Re-phasing of investment	-66	-56	10	45	37	23	-7
SR10 Completion Costs	122	104	56	37	16	2	337
PFI completion	4	2	0	0	0	0	6
Infrastructure charges investment	3	7	5	6	7	8	36
Total investment (nominal prices)	**437**	**522**	**586**	**654**	**669**	**670**	**3,538**
Exceptional capital maintenance	0	42	19	14	0	0	75
Additional investment financed from customer contributions	17	16	5	1	0	0	39
Sub total (nominal prices)	**454**	**580**	**610**	**669**	**669**	**670**	**3,652**
Additional programme risk	0	0	0	0	50	50	100
Investment profile (nominal prices)	**454**	**580**	**610**	**669**	**719**	**720**	**3,752**

Table 9: Forecast investment profile 2015 to 2021

We expect to deliver annual capital investment within +/- 5% of the overall annual profile of forecast investment set out above.

Our forecast costs of the investment programme are £186 million higher than in our 2015 Delivery Plan as shown in Table 10 below.

	£m	£m
Exceptional capital maintenance (Ayrshire Resilience Scheme and strategic mains diversions)	120	
Emerging risks for Daldowie and Dalmarnock waste water treatment works	100	
Supporting economic development (financed by additional customer contributions)	35	
		255
Offset by:		
Log-down of elements of the programme no longer required and use of appropriate IR18 allowances[8]	-45	
Lower inflation forecast	-24	
		-69
Total increase in the investment programme		**186**

Table 10: Increase in the investment programme from 2015 Delivery Plan

As recognised in the Cabinet Secretary's letter of 5 January 2016[9], the delivery of our investment programme requires multi-year projects and commitments. Over 2016/17, we forecast that the total capital expenditure we will have committed to, including maintaining our assets and supporting economic development throughout the period, will reach around £3 billion out of the total forecast programme costs of around £3.7 billion.

Operating costs

Our forecast operating costs, shown in Table 11, reflect the 2015 Delivery Plan adjusted for revised RPI and lower property rates charges following the settlement of the 2005 Water Undertaking rating revaluation.

[8] This includes not progressing with the Advanced Anaerobic Digestion Plant as proposed in Section 5.
[9] Letter from the Cabinet Secretary for Infrastructure Investment and Cities to Lady Susan Rice of 5 January 2016 providing support for the required new borrowing.

Operating costs (£m)	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
Forecast Total Operating Costs per 2015 Delivery Plan (2012/13 prices)	**354**	**355**	**354**	**352**	**350**	**350**
Revised nominal inflator (RPI)	1.059	1.084	1.116	1.155	1.196	1.238
Forecast Total Operating Costs per 2015 Delivery Plan (outturn prices)	**375**	**385**	**396**	**407**	**419**	**434**
Adjusted for: (i) lower local authority rates charges	-3	-3	-3	-3	-3	-3
(ii) Reduction in actual costs in 2015/16	-5	-	-	-	-	-
Forecast Total Operating Costs (outturn prices)	**367**	**382**	**393**	**404**	**416**	**431**

Table 11: Annual operating costs

It is important to note that there are several costs we incur that are not fully in our control. While indexing of costs by RPI will protect us from most cost changes, there are risks of one-off changes to our costs that we may not be able to manage within this plan. These risks were set out in our 2015 Delivery Plan and an update is provided on page 30.

Interest payable

Closing debt as of 31 March 2015 was £3,424 million. The weighted average interest rate of the outstanding long-term debt was 4.86%. For new borrowing in the 2015 to 2021 period, the assumed average interest rate remains at 4%. While we will continue to manage our debt portfolio efficiently and in a way that protects customers from significant risks, we are exposed to the consequences of increasing interest rates.

Financial Strength

We exited the 2010 to 2015 period with £345 million of cash balances. The planned cash utilisation profile during the 2015 to 2021 period, assuming borrowing of £190 million a year from 2017-18 onwards, is summarised in Table 12.

£m, forecast outturn	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
Opening cash balance	345	390	226	252	224	145
Closing cash balance	390	226	252	224	145	62
Cash utilised	**-45**	**164**	**-26**	**28**	**79**	**83**

Table 12: Cash balance profile

As shown in Table 12, we are forecasting a cash balance in 2021 of £62 million, which equates to around 2 weeks cashflow.

Financial Projections

Profit and loss account

£m, forecast outturn	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
Turnover	**1,119**	**1,122**	**1,157**	**1,183**	**1,206**	**1,228**
Operating expenditure	376	382	393	404	416	431
PFI operating costs	113	124	129	135	141	147
Depreciation charges - non infrastructure assets	225	218	221	224	229	237
Depreciation charges - infrastructure assets	15	15	15	16	16	16
Depreciation charges - PFI assets	19	19	19	19	19	19
Infrastructure capital maintenance charge	118	120	123	128	132	137
Amortisation of deferred income	-1	-1	-1	-1	-1	-1
Operating profit	**254**	**245**	**258**	**258**	**254**	**242**
Profit or loss on disposal of fixed assets	14	2	0	0	0	0
Net interest receivable less payable	-151	-160	-162	-168	-175	-181
Interest on PFI & net pension liabilities	-30	-22	-21	-20	-19	-18
Profit before taxation	**87**	**65**	**75**	**70**	**60**	**43**
Taxation – current	0	0	0	0	0	0
Taxation – deferred	-17	-13	-15	-14	-12	-9
Retained profit	**70**	**52**	**60**	**56**	**48**	**34**

Retained profit per 2015 Delivery Plan	**38**	**35**	**46**	**47**	**47**	**45**

Table 13: Profit and loss account

Balance Sheet

£m, forecast outturn	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
Fixed Assets						
Tangible assets	5,164	5,361	5,596	5,885	6,215	6,534
PFI assets	364	347	328	308	289	270
Third party contributions	-14	-13	-12	-11	-10	-9
Other Operating Assets and liabilities						
Working capital	-324	-297	-295	-299	-304	-313
Cash	390	226	252	224	145	62
Net operating assets	**5,580**	**5,624**	**5,869**	**6,107**	**6,335**	**6,544**
Non-operating assets and liabilities						
Borrowings (excluding Government Loans)	-1	-1	-1	-1	0	0
Financial reserve	0	0	0	0	0	0
Investment in subsidiaries	35	35	35	35	35	35
Total non-operating assets and liabilities	**34**	**34**	**34**	**34**	**35**	**35**
Provisions for liabilities & charges						
Deferred tax provision	-415	-428	-443	-457	-469	-478
Post-employment asset / (liabilities)	-175	-175	-175	-175	-175	-175
Other provisions	-9	-8	-8	-8	-8	-8
Total provisions	**-599**	**-611**	**-626**	**-640**	**-652**	**-661**
Net assets employed	**5,015**	**5,047**	**5,277**	**5,501**	**5,718**	**5,918**
Capital and reserves						
Government Loans	3,423	3,423	3,613	3,803	3,994	4,184
PFI debt/lease	364	344	324	302	280	256
Retained earnings	1,266	1,318	1,378	1,434	1,482	1,516
Pension surplus/(deficit)	-172	-172	-172	-172	-172	-172
Other reserves	134	134	134	134	134	134
Total capital and reserves	**5,015**	**5,047**	**5,277**	**5,501**	**5,718**	**5,918**

Table 14: Balance sheet

Cashflow statement

£m, forecast outturn	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
Regulatory income and expenditure						
Turnover	1,119	1,122	1,157	1,183	1,206	1,228
Operating expenditure	-376	-382	-393	-404	-416	-431
PFI operating costs	-113	-124	-129	-135	-141	-147
Capital maintenance expenditure	-268	-301	-312	-324	-351	-366
Amortisation of deferred income	1	1	1	1	1	1
Operating profit for regulatory purposes	**363**	**316**	**324**	**321**	**299**	**285**
Reconciliation of regulatory operating profit to net cash flow						
Operating profit for regulatory purposes	363	316	324	321	299	285
Movement in working capital	23	-29	-4	1	1	2
Capital maintenance expenditure	268	301	312	324	351	366
Amortisation of deferred income	-1	-1	-1	-1	-1	-1
Non cash adjustment for retirement benefit obligations	9	0	0	0	0	0
Net cash flow from operating activities	**662**	**587**	**631**	**645**	**650**	**652**
Taxation						
Taxation paid	0	0	0	0	0	0
Returns on investments & servicing of finance						
Interest received	2	2	1	1	1	1
Interest paid	-155	-160	-163	-169	-176	-182
PFI interest payable	-23	-22	-21	-20	-19	-18
PFI finance lease repayments	-18	-20	-20	-22	-22	-24
Net cash flow from returns on Investment & servicing of finance	**-194**	**-200**	**-203**	**-210**	**-216**	**-223**
Net cash flow before investment and maintenance charges	**468**	**387**	**428**	**435**	**434**	**429**
Capital expenditure and financial investment						
Capital enhancement expenditure	-181	-266	-293	-344	-368	-354
Capital maintenance expenditure	-268	-301	-312	-324	-351	-366
Infrastructure charges income	11	13	12	14	15	17
Disposal of fixed assets	15	3	1	1	1	1
Net cash outflow from investing activities	**-423**	**-551**	**-592**	**-653**	**-703**	**-702**
Net cash flow before financing	**45**	**-164**	**-164**	**-218**	**-269**	**-273**
Financing						
New Government loans	324	119	313	313	315	325
Government loans repayments	-324	-119	-123	-123	-125	-135
Net cash inflow from financing	**0**	**0**	**190**	**190**	**190**	**190**
Increase (decrease) in cash and cash equivalents	45	-164	26	-28	-79	-83
Net cash flow	**-45**	**164**	**164**	**218**	**269**	**273**

Table 15: Cashflow statement

Risk

We identified the key risks in our 2015 Delivery Plan and the associated potential financial impact during the 2015 to 2021 period.

Two new major risks have emerged since we prepared our 2015 Delivery Plan.

HM Treasury: tax deductibility of corporate interest expense

Following an earlier consultation, the UK Government set out in its March 2016 Budget proposals to limit the tax deductibility of corporate interest expense. The impact of this could be to increase Scottish Water's taxable profits such that the tax losses would be used up more quickly and corporation tax would be payable sooner than forecast resulting in increased costs. The impact of the Budget's proposals is being assessed. From the earlier consultation we modelled various scenarios and estimated the potential cash impact on Scottish Water to be up to £25 million as tax payable in the current regulatory period.

UK Government reform of loss relief

In the March 2016 Budget the UK Government also set out proposals to reform loss relief. Under these proposals, groups will only be able to use losses carried forward against up to 50% of their taxable profits above £5 million. Detailed guidance on these measures and draft legislation is not yet available, with the UK Government proposing a consultation and an intention to legislate in 2017. The impact of this could be to restrict the availability of losses to offset profits and therefore tax would be due by Scottish Water in the 2015-21 period.