



Tideway



GREEN BOND REPORT
2018/2019

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Bazalgette Tunnel Limited (BTL, trading as Tideway) and its financing subsidiary Bazalgette Finance plc (BFP), published in November 2017 a framework for the issuance of Green Bonds.

BFP issued its inaugural Green Bond, which was also its debut public bond, on 30 November 2017 and a further five Green Bonds between December 2017 and May 2018 for a total amount of £775 million. This is Tideway's first annual Green Bond update to investors.

The bond proceeds are used to finance the construction of the Thames Tideway Tunnel (TTT), often referred to as London's super sewer, a major infrastructure project that will tackle sewage pollution in the River Thames. Tunnelling of the 25km tunnel started in November 2018 and when complete will prevent tens of millions of tonnes of untreated sewage polluting the river each year (on average). Tideway is a 'pure-play' issuer, deriving all its revenues from green assets, i.e. the tunnel currently under construction.

Tideway's Green Bond programme contributes to the lasting legacy of reconnecting London with the River Thames.

Tideway's Green Bond Framework is aligned with the four core components of the International Capital Markets Association (ICMA) Green Bond Principles. Accordingly, Tideway undertook to update investors on an annual basis on the allocation of proceeds and impact of the project.

All six bonds were issued by Bazalgette Finance plc, are listed in the London Stock Exchange Green Segment and received a second opinion from S&P Global Ratings, with the top score of E1/95 for the Green Evaluation.

Please refer to the table below with details of each bond series.

Green Bonds	Series 11	Series 12	Series 13	Series 14	Series 15	Series 16
Issuer	Bazalgette Finance PLC	Bazalgette Finance PLC	Bazalgette Finance PLC	Bazalgette Finance PLC	Bazalgette Finance PLC	Bazalgette Finance PLC
Size £ million	250	200	150	75	50	50
Issue Date	30-Nov-17	01-Dec-18	16-Apr-18	17-May-18	17-May-18	17-May-18
Interest Rate	Fixed	CPI with collar	RPI	CPI	RPI	RPI
Final Maturity Date	29-Nov-27	30-Nov-42	13-Apr-32	16-May-52	16-May-49	16-May-49
ISIN	XS1726309286	XS1726310961	XS1802472891	XS1819532760	XS1821454912	XS1821455216
Listing	LSE	LSE	LSE	LSE	LSE	LSE
Deferred Purchase	No	No	Yes Funding 2022	Yes Funding 2022	Yes Funding 2022	Yes Funding 2023
Second Opinion	S&P Global Ratings Green Evaluation					
APS Allocation £ million	250	200	N/A	N/A	N/A	N/A

ALLOCATION OF PROCEEDS

The proceeds from the two Green Bonds that have funded (series 11 and 12) were on-loaned by BFP to BTL and deposited in BTL's sole operating bank account.

The funds were subsequently drawn to fund the design and construction of the tunnel. While in the operating account, the funds were managed by Tideway's Treasury team in accordance with the company's investment management policy that aims to preserve capital and liquidity.

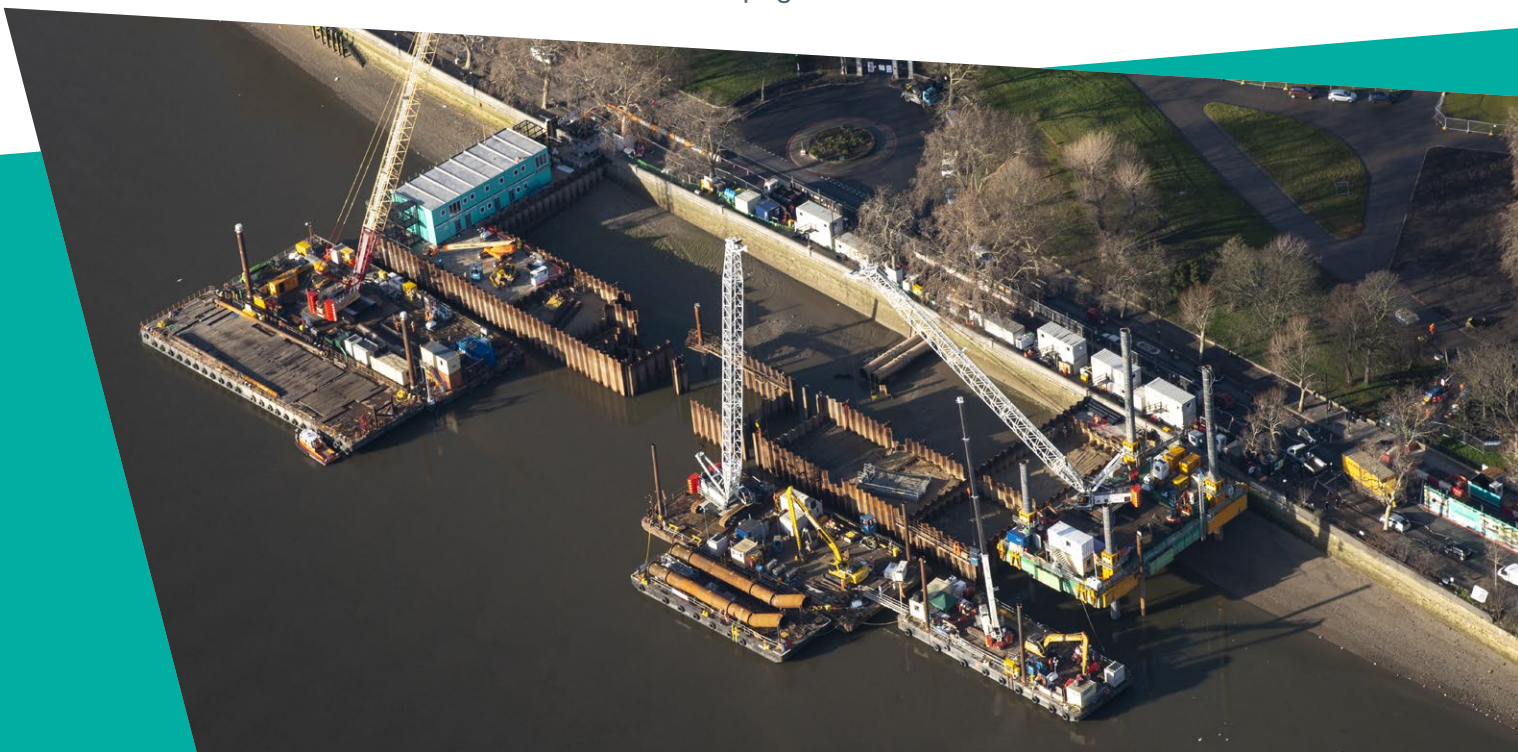
Funds were invested in deposits with Tideway's banks and in liquid money market funds.

Further to the Green Bond Framework, funds were disbursed to pay for Allowable Project Spend, as defined in the Licence, which is the cumulative expenditure incurred for the Thames Tideway Tunnel, constituting the regulatory capital value. The Allowable Project Spend is calculated by Tideway and verified on a monthly basis by Mott McDonald, the Independent Technical Assessor (ITA), appointed in connection with the Liaison Agreement, establishing a Liaison Committee with Tideway, Defra and Thames Water as members and Ofwat and the Environment Agency as observers.

The ITA certified £530.7 million of Allowable Project Spend during the 12-month period from November 2017 to October 2018, as follows:

November 2017	£45.5
December 2017	£70.3
January 2018	£3.9
February 2018	£42.1
March 2018	£91.3
April 2018	£7.8
May 2018	£42.2
June 2018	£42.8
July 2018	£44.6
August 2018	£37.7
September 2018	£63.6
October 2018	£38.9

Of this amount, £450 million were allocated to the Green Bonds series 11 and 12, issued and funded on 30 November 2017 and 1 December 2017 respectively. The other four Green Bonds were issued on a deferred basis and will fund in 2022 and 2023. Please refer to the table on the previous page.



IMPACT REPORTING CONSTRUCTION PHASE

Environmental

The expected environmental and economic benefits of the project remain as per the original development consent order until the tunnel is built and starts operations:

- In a typical year, for 2006 conditions, the tunnel will reduce polluting discharges by circa 16 million cubic metres (avoided and captured for treatment)
- The three components of the London Tideway Improvements work conjunctively to reduce discharges in a typical year by about 37 million cubic metres, as described in the Green Bond Framework

Construction is underway with handover planned for 2024. We are now 40 per cent through the project and in peak construction. We have made significant progress and met some important milestones. Our work has included building shafts, tunnelling, establishing marine operations and delivering our More by River strategy.

We have mobilised on 20 of our 21 sites, taken delivery of four out of the total six tunnel boring machines and tunnelling operations have now commenced.

Tideway has made good progress towards its ambition to safely deliver the TTT at the right quality and to best value. We continue to develop our approach to health, safety and wellbeing and are pleased to report that no life-changing injuries have occurred to date.

Legacy

While the main benefit of the tunnel when built is to prevent pollution and improve biodiversity in the tidal River Thames, during the eight-year construction period, the project is addressing several sustainability areas, such as bringing more women into engineering and construction, using the river for transportation of 90 per cent of materials and spoil thereby reducing the number of road vehicle journeys needed, and employing people living in the area affected by the works, also setting targets on employing apprentices and ex-offenders.

Our commitments have evolved into 54 metrics within our Legacy Plan under five themes that capture the range of opportunities created by the project—Environment; Health, Safety and Wellbeing; Economy; People; and Place. We are maintaining a high standard of overall performance against the Legacy commitments, with 39 commitments live across the programme (out of the overall 54 to be active by the end of the construction phase). Of these, 35 are on track equating to 90 per cent of legacy commitments on or above target against our overall target of 75 per cent. In addition, an independent assessment of the social value of our legacy commitments has shown that the anticipated return on investment for every Tideway pound spent was approximately £3.39.

We have mapped our Legacy commitments against the UN Sustainable Development Goals (SDGs). The Green Bond Framework highlights the SDGs where we expect to make a significant contribution. An update on these follows on the next few pages.

The two main SDGs once the tunnel is operating are Goals 6 and 11 as these will have a lasting impact in London, for generations to come:



SDG 6 Clean Water & Sanitation

Ensure availability and sustainable management of water and sanitation for all

The London Tideway Improvements projects, of which the Thames Tideway Tunnel is the last component, will work to reduce the number of discharges from over 50 to four or fewer in a typical year. The Thames Tideway Tunnel will collect sewage before it enters the river, cleaning up the river for future generations of Londoners. This will also help to prevent fish kills and allow the river to sustain a rich, diverse array of wildlife.

Construction of the Thames Tideway Tunnel is underway with handover planned for 2024.

In order to achieve a baseline, the Zoological Society of London completed a baseline breeding seal survey in July 2018 which was part-funded by Tideway. The results showed an increase in the number of harbour seal pups at all sites surveyed when compared with the survey results from 2011. These studies help to improve knowledge and understanding of the river ecosystem, and form part of a wider baseline against which improvements in water quality following construction of the tunnel can be measured.

SDG 11 Sustainable Cities and Communities

Make cities and human settlements inclusive, safe, resilient and sustainable



A modernised sewerage network underpins the capital's general economic prosperity. The economic benefits will be felt across many areas. A key economic legacy objective is to contribute to the rejuvenation of London's river economy, both recreationally and commercially, supporting the Mayor of London's environmental and transport strategies.

We are implementing our More by River strategy which aims limit Tideway's use of the road as much as possible, to increase safety and reduce congestion and air quality impacts around our sites. Excavated material from the tunnel is being removed by barge, the largest of which can carry up to 1,500 tonnes, equating to 94 lorry loads and preventing 188 lorry movements. The project to date has moved approximately 935,000 tonnes of material by river, saving around 114,800 heavy goods vehicle (HGVs) movements. In the last year we moved approximately 560,000 tonnes, saving around 68,000 HGV movements, almost 200 lorry movements kept off London's roads each day. Not only does this reduce the risk of impact with other road users, but also river transport has significant air quality benefits compared with the equivalent road emissions.

Tideway is the first infrastructure project to capture comprehensive emissions data which shows that a 1,000-tonne tug at 75 per cent engine load produces 54 per cent reduction in NO_x, 86 per cent reduction in NO₂ emissions and 90 per cent reduction in CO₂ per tonne km than the modern standard HGV.

Tideway is creating new areas of public realm to connect the capital's residents and visitors with the river more closely than is currently possible.

By the time the tunnel is built and in operation, we will have created three acres of new public realm along the route of the River Thames at seven different locations. Parts of the new spaces at Victoria and Chelsea Embankments and at King Edward Memorial Park will be 'floodable' at high tides, giving Londoners a rare opportunity to dip their toe in what will be a cleaner River Thames. We will also be opening up sections of the Thames Path currently closed to the public, and making improvements to the existing route where we can.

Tideway's partnership with Thames21, the charity working with communities to improve rivers and canals for people and wildlife, continues to strengthen through the Thames River Watch programme, with 839 people attending 175 clean-up and litter survey events in the period. A new element of the programme was launched in the spring of 2018 with the introduction of Thames River Watch 'ambassadors', who carried out surveys at clean-up events to check local people's understanding and views on the Thames and its wildlife.

The programme collected more than 33,000 plastic bottles in the year, including 3,249 (40 per cent of which were water bottles) at a 'Big Count' event across multiple sites on the same day. A 'Big Count' for wet-wipes in March found more than 23,000 in just one stretch of foreshore at Hammersmith Bridge.

As well as holding regular clean-ups and surveys to support Thames River Watch, Tideway volunteers also supported a related project called In The Drink, funded by Defra, which is collating a report on the policies and practices of riverside pubs and restaurants in relation to single-use plastic cups, to try to reduce their usage and therefore the risk of them ending up in the river.

Tideway's second Foreshore Festival took place in September 2018, and engaged in celebrating the River Thames through a series of family-friendly activities including kayaking, fish surveys with the Zoological Society of London and raising awareness of plastic pollution.

We continued our work with Trees for Cities in 2018, which involved the planting of more than 100 trees around London with various community groups. The tree-planting is part of our legacy commitment to plant at least two trees for every one that has to be removed during our works.



In addition and particularly during the construction period, Tideway will make a significant contribution to the following SDG's:

SDG 3 Good Health & Wellbeing

Ensure healthy lives and promote well-being for all at all ages

We want to see a step change in the health and wellbeing of everyone working on the project, as well as our partners and stakeholders and, in the process, hopefully set new standards for the industry. We have had no life changing injuries to date. Overall, the programme accident frequency rates have remained below other large infrastructure projects working at similar phases of construction. However, we did have a number of lost-time incidents, including six injuries which resulted in over-seven-day absence. We are committed to doing things better and we have investigated these incidents and implemented the lessons learned.

Our Health, Safety & Wellbeing (HSW) strategy is implemented through our RightWay approach, establishing a working environment that allows individuals to plan ahead, to challenge, to continually strive to do things better and to reinforce a positive HSW culture through effective leadership. This includes conducting RightStart reviews across the programme, before the start of any significant phase of construction, to ensure HSW has been adequately considered, involving the contractors and the workforce.

We established our innovative and interactive induction programme, EPIC, in 2015/16 and it has been widely recognised as industry-leading. EPIC is a mandatory, one-day immersive induction course, using actors and a structured management training approach to help every individual understand how to make Tideway the safest and healthiest project yet. To date, more than 15,500 people have attended the programme including approximately 3,300 in 2018/19. This includes people working on Tideway and from other interested companies, which supports our aim of being transformational and further improving health and safety in the wider construction industry. In feedback to date, over 95 per cent of participants said they would be more confident in challenging poor health and safety practice as a result of the induction. EPIC has since been extended, with new modules developed for road logistics and marine activity, with nearly 600 attending the logistics course.

We introduced the Health and Safety Performance Index (HSPI) in 2016/17, a balanced scorecard to measure the HSW performance of our contractors. HSPI comprises a set of leading performance indicators (with scores from 0 to 3), developed by analysing accident and incident data from previous projects and considering future risk profiles. The overall HSPI score improved from 2.00 to 2.44 during 2018/19, with nine of the 11 measures meeting or exceeding an average score of two (exceeds HSW expectations).

Other initiatives include the roll-out of mini health checks for the workforce and the commissioning of a fatigue research scoping study from Loughborough University to improve the construction industry's understanding of the nature of fatigue and sleepiness. The study focussed specifically on shift patterns, non-work activities and how the industry can better manage the risks involved. We have also developed Occupational Health Inspections (OHI), a tool for measuring occupational health risk management.

An occupational hygienist visits sites and counts examples of good and poor practices, using a standard score sheet. The OHI score for the project is high, at 92 per cent for West and Central, and 93 per cent for East.

Mental health—we continued to support Mates in Mind, a charity which raises awareness and understanding of mental health and mental ill-health in construction. We have also launched a training programme called ‘Start the Conversation’ which aims to create general awareness and understanding of mental health and its biggest barriers, and currently have 56 trained mental health first aiders. Our results for how well we care for people’s welfare and mental health both improved from previous years and were above industry benchmarks.



SDG 4 Quality Education

Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

Obtaining a quality education is the foundation to creating sustainable development. Tideway’s education programme is now in its sixth year of operation. We engage with schools to encourage the next generation into STEM subjects and in the past year have reached more than 3,000 young people, with more than 450 hours volunteered by the Tideway workforce.

Our education programme includes the development of a bespoke website ‘Tunnelworks’ which has free online resources for primary, secondary and post-16 groups. The site’s aim is to connect theoretical classroom learning with real-world applications, showing students how the knowledge and skills they are gaining in school will directly support their future jobs and careers. www.tideway.london/tunnelworks

We have partnered with Construction Youth Trust (CYT), a charity that inspires and supports young people to achieve their full career potential in the construction industry, especially those who are disadvantaged or facing significant barriers to working life. CYT has engaged with around 7,000 young people in London schools, with large cohorts of young people under represented in construction. In 2018 CYT’s impact report showed that:

- 94 per cent students said they increased their knowledge of careers within the sector
- 75 per cent said they were more interested in a career in construction after the activity

Tideway has established the Thames Skills Academy (TSA) in partnership with the Port of London Authority, Transport for London and the Company of Watermen and Lightermen. This will set new standards for health and safety training for those working on the river. The TSA is launching new apprenticeships and training programmes which will help the project’s apprentice targets and support our aims for a river skills legacy.

Recent developments include the first maritime engineering apprenticeship available on the Thames; a ‘Trailblazer’ Master Boat Licence apprenticeship which will launch in 2019; the introduction of a CPD programme for key river workers; the extension of the TSA riverside safety course beyond TSA members; and an annual *#CareersOnTheThames* event to raise awareness of

opportunities. The TSA aims to offer more courses, dates and locations as it works towards gaining Construction Industry Training Board accreditation.

We have also been involved in the trailblazer group developing the new Environmental Practitioner apprentice standard which launched in June 2019.



SDG 5 Gender equality

Achieve gender equality and empower all women and girls

Tideway is working to make the industry attractive to all members of the community, with science, technology, engineering and mathematics (STEM) programmes in schools and colleges, returnship programmes, flexible working and gender specific personal protective equipment.

Gender diversity is a key performance indicator for us and we finished the financial year with 34 per cent female staff. This is below our end-of-year target of 40 per cent and down two per cent on last year.

However, we continue to seek ways to achieve our aim of gender parity by the end of construction.

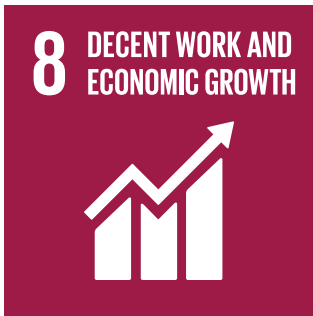
In 2018, Tideway received the ‘Women Into Construction (WIC) Most Engaged Client Award’ for its support of WIC, and willingness to engage in positive action programmes to work towards achieving gender equality.

Tideway was named in The Times Top 50 Employers for Women 2018 with its Chief Executive Officer Andy Mitchell a finalist in the Gender Champion Award category. Tideway was recognised for a number of initiatives including establishing the first Returner Programme outside the banking industry, specially designed culturally modest personal protection equipment (PPE) and maternity PPE and an employee resource group for gender parity.



“The Tideway project has provided me with the opportunity to develop and enhance my knowledge and skills rapidly and I am learning something new every day”

Tideway’s 100th apprentice, Callum Davis



SDG 8 Decent work and economic growth

Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

To ensure that the project benefits those living within the vicinity of our sites, we have set targets for the workforce employed on the project, including local employment, apprentices and ex-offenders. We also require that employees are paid at least the London Living Wage and have set targets for contractors to hire apprentices.

Since the start of the project, Tideway has employed 21 per cent of the workforce from within the 14 boroughs we are working in, and we are still working to reach our 25 per cent target. 55 per cent of river workers come from London, Kent or Essex—the Tidal Thames area, well above our 30 per cent target. The target of having 20 per cent of employees living in the local area at each drive site is proving challenging, with current performance at 12 per cent versus the 20 per cent target. The location of the three main drive sites in central London makes local recruitment challenging although we continue to explore local recruitment strategies. The target of paying the London Living Wage to all the workforce on the project is being met and it currently stands at 99.6 per cent, with exceptions being investigated.

Tideway is meeting the target on apprentices at 1 in 50 workers, with 57 apprentices currently in positions. Since the project started there have been more than 100 apprenticeship opportunities offered on the project.

To encourage people into employment who have been previously out of work, we have set a number of targets such as one in 100 employees should be an ex-offender. We are currently at one in 124 and are working closely with various charities and the HM Prison and Probation Service to improve this figure.

We are also exceeding our target of 10 per cent for 'new starters', those that are newly employed by the companies and not transferred from another project.



SDG 9 Industry, Innovation & Infrastructure

Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation

Tideway is building on the excellent work of other major infrastructure projects and helping to create a springboard for the UK workforce and companies to become world-class. Not only will our innovations be shared with the industry so future projects may benefit, but we have helped create a new web-based forum, the Infrastructure Industry Innovation Platform (i3P), to achieve this goal.

Tideway has invested £576,000 to date in Tideway Innovation Forum invested projects, with the main work contractors match-funding £211,000. These investments produced estimated cost savings to date of £1.6m, a return on investment of 2.1:1. Forecast cost savings are £9.1m over the duration of the construction stage of the project.

Our innovative and interactive induction programme, EPIC, described above in Goal 3, has been widely recognised as industry-leading and has to date won numerous industry awards, including seven golds, two silvers and a bronze from training industry peers.

Our More by River strategy aims to keep as much traffic off the roads as possible. But as it is not possible to implement a complete modal shift, we are working with industry to improve the standards of the residual road movements. Tideway invested in a fleet of HGVs designed to be safer for cyclists and pedestrians, 27 to date. These innovative new low-entry cab vehicles feature redesigned cabs that increase the amount of direct driver vision, providing a much better chance of drivers seeing vulnerable road-users especially cyclists. Tideway requires every construction HGV driver working on the project to take part in a full-day immersive training programme. Tideway has also been working to inform cyclists of the dangers of getting too close to HGVs. The programme provides cyclists with a short briefing with a police officer in the driver's seat of an HGV to give them the best understanding of what drivers can and can't see when on the road.

Tideway is working in partnership with the Institute of Civil Engineers, having recently organised a conference to showcase the very best in technical excellence from across the project and looking to see how to build on this for the end of the project, and for the industry beyond the project.



SDG 12 Responsible consumption and production

Ensure sustainable consumption and production patterns

Tideway strives to ensure that resources and materials come from responsible sources that do not use modern slavery and have not been produced in a way that is harmful to the environment during their extraction and production. That is why we require all our key building materials, principally steel, cement, aggregates and timber, to be certified to either Building Research Establishment's (BRE) responsible sourcing standard BES 6001 'very good or above', CARES Sustainable Constructional Steel (SCS), Eco-Reinforcement or FSC or PEFC timber, as applicable.

At the end of 2018 our contractors reported 95 per cent of applicable materials were sourced from certified sources.

We had our first BRE BES 6002, Ethical Labour Sourcing Standard (ELS) assessment in 2018, in which we achieved the baseline criteria. We were the fourth company and first client organisation to complete the assessment.

Tideway is committed to the Fair Payment Charter, which supports BEIS's ambition to ensure the construction industry has standard 30-day payment terms. The Fair Payment Charter has been issued to our MWCs and joint venture partners as part of their contractual obligations and we monitor their compliance.



SDG 13 Climate action

Take urgent action to combat climate change and its impacts

As signatories of the Government's Infrastructure Carbon Review, we assess our progress against their maturity matrix and report our performance to the Department of Business, Energy and Industrial Strategy on an annual basis.

We achieved eight of the 12 targets within our Carbon Action Plan for 2018, slightly less than the 2017/18 achievement of 75 per cent. Three of the remaining targets were completed in April 2019 with a plan in place to complete the final one by the Summer 2019.

Significant savings with regard to capital carbon were made during the tunnel route selection process, leading to a reduction of 19 per cent of the 120-year carbon footprint. This resulted in a predicted carbon footprint for the construction phase of 780,000 tonnes CO₂e. Our contractors are required to report performance against the predicted baseline on a quarterly basis.

We are now able to calculate our Scope 2 and 3 emissions, as defined by the World Resources Institute and the World Business Council for Sustainable Development. We consider our Scope 2 (energy indirect) to be for our offices at both the Cottons Centre and Camelford House, where EPIC is based. The Main Works Contractors continue to calculate and report their emissions on a quarterly basis, which we consider to be Scope 3 (other indirect) according to the GHG Protocol Corporate Standard.

The totals for 2018 were:

- Scope 2: 134 tonnes CO₂e
- Scope 3: 78,243 tonnes CO₂e

As the majority of the 120-year carbon footprint occurs during the construction phase, we have been working with our supply chain to identify further opportunities for reduction. Some innovative and likely industry-leading approaches have been implemented aimed at reducing carbon emissions from non-road mobile machinery (NRMM). These include introducing the world's first electric hydrofraise for the construction of the diaphragm wall at Chambers Wharf and the intelligent use of plant telematics on our NRMM plant. Fuel consumed by NRMM plant significantly contributes to the project's carbon footprint and has a detrimental effect on the local air quality around our sites.

The electric hydrofraise is a rotary trench cutting machine that runs off mains electricity instead of diesel, with the following benefits:

- Occupational health and environmental noise reduction—the electric system reduced the hydrofraise plant sound power level (LW_a) (dB) from 117 to 111. A reduction in six dB is a reduction in approximately 50 per cent of sound energy which is clearly noticeable
- Emissions reduction—reduced carbon emissions and associated air pollution by approximately 19 per cent compared to a diesel system
- Carbon reduction—powered by 100 per cent renewable energy for most of the time—avoided 137.63 tonnes of carbon emissions in first six months of operation

CASE STUDY – MORE BY RIVER

Through our ‘More by River’ strategy, we are ensuring that we transport as many materials as we can by river, keeping lorry movements off London’s roads to limit pollution, congestion and to protect road-users.

The project’s use of river transport is on a scale unprecedented in modern times. We have committed to transport 90 per cent of tunnel spoil—about 4.2 million tonnes—by river. This requires a major modernisation of the fleet of commercial boats operating on the river, and Tideway has been a key partner in a new training centre for river boat operators called the Thames Skills Academy (TSA). The partnership with the Port of London Authority, Transport for London and the Company of Watermen and Lightermen is setting new standards for health and safety training for those working on the river.

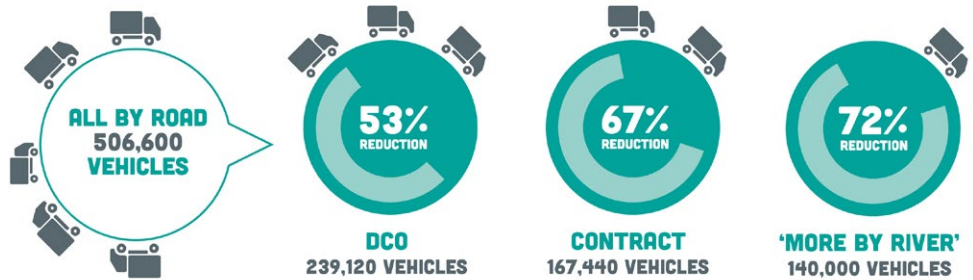
At the end of March, the project had moved approximately 935,000 tonnes of material by river, saving around 114,800 Heavy Goods Vehicle movements.

In the last year we moved approximately 560,000 tonnes, saving around 68,000 HGV movements.

Research carried out by Tideway looked at the air quality benefits of moving material by barge instead of road. Tideway is the first infrastructure project to develop comprehensive data on this issue and concludes moving material by barge produces far fewer emissions than the equivalent by road.

Even when compared to the modern standard heavy goods vehicles, the tests indicated a 75 per cent engine load, 1,000 tonne barge will on average produce 54 per cent less NOx, 86 per cent less NO2 emissions and 90 per cent less CO2 than its HGV equivalent.

The benefits set out in our river strategy were recently recognised by EDIE in the Sustainability Leaders Award, winning the ‘mobility’ category.



For more information about Tideway, our language interpretation service or for Braille and large print:
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