

Second-Party Opinion

Transport for London Green Bond Framework 2020



Evaluation Summary

Sustainalytics is of the opinion that the Transport for London (TfL) Green Bond Framework 2020 is credible and impactful and aligns with the four core components of the Green Bond Principles 2018. This assessment is based on the following:



USE OF PROCEEDS The eligible categories for the use of proceeds (i) Clean Transportation, (ii) Pollution prevention and control, and (iii) Renewable energy are aligned with those recognized by the Green Bond Principles 2018. Sustainalytics considers that the eligible categories will lead to positive environmental impacts and advance the UN Sustainable Development Goals, specifically SDG 3, 9, 7 and 11.



PROJECT EVALUATION / SELECTION Transport for London's internal process for evaluating and selecting projects is managed by the "working group", which is led by the Group Financial Accounting ("Accounting") department, with support from Corporate Finance, TfL's Safety, Health and Environment and City Planning teams. On an annual basis, the working group will review the aggregate pool of green expenditures for alignment with eligibility criteria listed in the Framework. The Issuer intends to fully allocate proceeds within 24 months after the issuance date of each Green Bond. Sustainalytics considers the project selection process in line with market practice.



MANAGEMENT OF PROCEEDS Transport for London's processes for management of proceeds is handled by the working group. Transport for London intends to allocate an amount equal to the net process to its general cash pool and track so that this cash is linked to its expenditure in the Eligible Green Project Categories. Pending full allocation, the balance of unallocated proceeds will be invested in cash or short-term, liquid money market instruments in accordance with TfL's Treasury Management Strategy & Policies. This process is aligned with market practice.



REPORTING Transport for London intends to report on allocation of proceeds on its website on an annual basis until full allocation. TfL will report on total amount allocated to Eligible Green Projects, the year of investment/disbursement and the balance of unallocated proceeds. In addition, TfL is committed to reporting on relevant environmental impact metrics. Sustainalytics views Transport for London's allocation and impact reporting plans to be aligned with market practice.

Evaluation date	January 2020	
Issuer Location	London, United Kingdom	

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Introduction

Transport for London ("TfL", or the "Issuer") is the local public body responsible for public transport in the City of London and the Greater London area in the United Kingdom. It ensures the implementation of a transport plan and the continuity of regular transportation services throughout London.

TfL has developed the TfL Green Bond Framework 2020 (the "Framework") under which it intends to issue multiple green bonds and use the proceeds to finance and refinance, in whole or in part, existing and future projects that can contribute to significant change in travel behaviour and towards a low-carbon public transportation system. The Framework defines eligibility criteria in three areas:

1. Clean transport
2. Pollution prevention and control
3. Renewable energy

TfL engaged Sustainalytics to review the TfL Green Bond Framework 2020 , dated January, 2020 and provide a second-party opinion on the Framework's environmental credentials and its alignment with the Green Bond Principles 2018 (GBP).¹ This Framework will be published in a separate document.²

As part of this engagement, Sustainalytics held conversations with various members of TfL's management team to understand the sustainability impact of their business processes and planned use of proceeds, as well as management of proceeds and reporting aspects of TfL 's Green Bond Framework. Sustainalytics also reviewed relevant public documents and non-public information.

This document contains Sustainalytics' opinion of the TfL Green Bond Framework 2020 and should be read in conjunction with that Framework.

¹ The Green Bond Principles are administered by the International Capital Market Association and are available at <https://www.icmagroup.org/green-social-and-sustainability-bonds/green-bond-principles-gbp/>

² The TfL Green Bond Framework 2020 is available on Transport for London 's website at: <https://tfl.gov.uk/info-for/investors/borrowing-programme>

Sustainalytics' Opinion

Section 1: Sustainalytics' Opinion on the TfL Green Bond Framework 2020

Summary

Sustainalytics is of the opinion that the TfL Green Bond Framework 2020 is credible and impactful and aligns with the four core components of the GBP 2018. Sustainalytics highlights the following elements of TfL's Green Bond Framework:

- Use of Proceeds:
 - The eligible categories, (i) Clean transportation, (ii) Pollution prevention and control, and (iii) Renewable energy are recognized as impactful by the GBP 2018. Sustainalytics positively views investments into the improvement of London's public transportation system.
 - Regarding clean transportation, TfL intends to use the proceeds to: improve and expand its operations across London including the construction of new rail lines and line extensions; the refurbishment or maintenance of existing rail infrastructure; the construction and development of new stations and technical centers; investments in new or renewed rolling stock; train signaling systems and zero emission vehicles and related infrastructure, including EV charging points for public-use and for the exclusive use of London's taxi fleet; as well as investments in the conversion of London's bus fleet to zero emission. TfL will also use part of the proceeds to invest in cycling and walking infrastructure and public realm improvements, e.g. investments in cycling infrastructure, improving crossing safety, junction improvements and green infrastructure.³ TfL has indicated that the above-mentioned investments are limited to electric infrastructure, which Sustainalytics considers credible, further reducing TfL's reliance on fossil fuels. Regarding TfL's bus fleet, investments will be directed towards vehicles which are zero emission at tailpipe, including electric and hydrogen fuel cell vehicles. TfL has also indicated that it will invest to minimise upstream emissions of the vehicles i.e. well-to-tank emissions.
 - With respect to investments in pollution prevention and control, TfL will use part of the proceeds to finance measures to improve air quality and reduce emissions, including emissions-based road charging schemes. The latter refers to the expansion of the Ultra-Low Emission Zone ("ULEZ"), under which road vehicles entering central London are required to meet strict emissions standards or pay a daily charge. A substantial portion of this category includes investment into the expansion of traffic camera infrastructure with Automatic Number Plate Recognition ("ANPR") systems, which is an essential enforcement mechanism.⁴ The ULEZ has resulted in substantial air quality improvements that are detailed in section 3 of the present opinion. Thus, Sustainalytics views the expansion of the ULEZ as credible, impactful, and contributing to the mitigation of transport-related air pollutants and emissions.
 - Finally, TfL may use part of the proceeds to invest in renewable energy generation, specifically solar energy. TfL has indicated to Sustainalytics that these investments are likely to be directed towards rooftop photovoltaic panels and/or on-land solar power generation.
- Project Evaluation and Selection:
 - Transport for London's internal process in evaluating and selecting projects is managed by the "working group", which is led by Group Financial Accounting ("Accounting") department, with support from Corporate Finance, TfL's Safety, Health and Environment and City Planning teams. On an annual basis, the working group will review the aggregate pool of green expenditures for alignment with eligibility criteria listed in the Framework. The Issuer intends to fully allocate proceeds within 24 months after the issuance date of each Green Bond. In addition, TfL has included a look-back period of 24 months. Sustainalytics considers the project selection process in line with market practice.

³ Green infrastructure includes green roofs, sustainable drainage systems, tree planting and other related "greening" activities.

⁴ When vehicles entering the charging zones are detected, the ANPR systems capture their number plates. Vehicle registrations are looked up against back office databases which detect whether the vehicle meets the required emissions standards to comply with the scheme. ULEZ charges are applied if the vehicle is found to be non-compliant with the scheme.

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- **Management of Proceeds:**
 - Transport for London's processes for management of proceeds is handled by Accounting. TfL intends to allocate an amount equal to the net proceeds to its general cash pool and track so that this cash is linked to its expenditure in the Eligible Green Project Categories. Pending full allocation, the balance will be invested in cash or short-term liquid money market instruments in accordance with TfL's Treasury Management Strategy & Policies. To manage this oversight, TfL will establish a Green Bond register that will contain details of the bond(s) and details of use of proceeds. In case of disinvestment or cancellation of a project, the Issuer commits to reallocate the proceeds to other green projects, tracking and reporting these changes to maximize transparency and prevent double counting. Sustainalytics considers this process to be in line with market practice.
- **Reporting:**
 - TfL intends to report on allocation of proceeds on its website on an annual basis until full allocation. On a portfolio basis, the allocation report will include total amount allocated to Eligible Green Projects, the year of investment/disbursement, and the balance of unallocated proceeds. In addition, Transport for London is committed to reporting on relevant impact metrics, examples include public transport journey time and network capacity benefits, estimated modal shift from road transport to public transport, walking and cycling, estimated total GHG emissions avoided, reduction in energy consumption, reduction of NO_x and particulate matter emissions. Sustainalytics views TfL's allocation and impact reporting as aligned with market practice.

Alignment with Green Bond Principles 2018

Sustainalytics has determined that the TfL Green Bond Framework 2020 aligns to the four core components of the GBP 2018. For detailed information please refer to Appendix 1: Green Bond/Green Bond Programme External Review Form.

Section 2: Sustainability Strategy of Transport for London

Contribution of framework to Transport for London's sustainability mandate

Mayor Sadiq Khan has set out an environmental vision to "make London the world's greenest global city".⁵ As the local transport authority created by the Greater London Authority (GLA) Act 1999, Transport for London is the integrated support authority responsible for delivering the Mayor's aims for transport as outlined in the Mayor's Transport Strategy ("MTS")⁶ and the London Environment Strategy ("LES").⁷ Additionally, TfL is set to launch its new Corporate Environment Plan in summer 2020, which will have clear and transparent environmental targets, and brings together all of TfL's environmental goals, including those outlined in the MTS and LES.

The MTS sets a target to have 80% of all trips in London to be made by sustainable modes⁸ by 2041, reducing Londoners' dependency on cars.⁹ The MTS also aims to improve the overall accessibility of the transport system, including halving the average additional time taken to make a public transport journey on the step-free network compared to the full network by 2041. In addition, the MTS ambitions for all new taxis to be Zero Emission Capable¹⁰ ("ZEC") at the time the strategy was released and for all new Private Hire Vehicles ("PHVs") from 2020. All new buses are expected to be zero emission from 2025, all new cars and vans from 2030 and all other vehicles from 2040. Therefore, all taxis and PHVs would be ZEC by 2033, "all

⁵ Transport for London, "Health, safety and environment annual report", (2019), at: <http://content.tfl.gov.uk/tfl-hse-annual-report-2018-19.pdf>

⁶ Mayor of London, "Mayor's Transport Strategy 2018", at: <https://www.london.gov.uk/sites/default/files/mayors-transport-strategy-2018.pdf>

⁷ Greater London Authority, "London Environment Strategy", (2018), at: https://www.london.gov.uk/sites/default/files/london_environment_strategy_0.pdf

⁸ Sustainable modes include public transport, cycling and walking.

⁹ Policy 1. The Mayor, through TfL and the boroughs, and working with stakeholders, will reduce Londoners' dependency on cars in favour of active, efficient and sustainable modes of travel, with the central aim for 80 per cent of all trips in London to be made on foot, by cycle or using public transport by 2041.

¹⁰ To meet the PHV ZEC requirement a vehicles must emit no more than 50g/km CO₂ and be capable of being operated with no (zero) exhaust emissions for a minimum range of 10 miles or emit no more than 75g/km CO₂ exhaust emissions and be capable of being operated with no (zero) emissions for a minimum range of 20 miles

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buses would be zero emission by 2037 and London's entire transport system would be zero emission by 2050."⁶

The LES imposes strict new emission requirements, which are applied progressively across London to achieve zero emissions from all vehicles by 2050. As such, the ULEZ has been implemented in April 2019, charging daily fees on vehicles entering central London that do not meet strict emission standards.¹¹ The ULEZ is expected to expand to inner London by 2021, covering an area 18 times larger than the zone currently in force.¹² Furthermore, Zero Emission Zones ("ZEZ") are expected to be implemented in town centres from 2020, aiming to deliver a zero-emission zone in central London from 2025. In addition, the LES introduces London's Healthy Streets Approach, which provides a framework for putting human health and experience at the heart of planning the city. This approach recognizes the importance of a sustainable transport system for reducing environmental impact and increasing social benefits based on ten indicators.¹³ Finally, the LES ensures that London and its communities, particularly the most disadvantaged and those in priority locations, are empowered to reduce their exposure to poor air quality.

Between 2018 and 2019, TfL's total emissions of NO_x fell by 26%, PM₁₀ emissions by 12% and CO₂ emissions by 10%.^{Error! Bookmark not defined.} While there was a 3% increase in demolition and excavation waste due to ongoing construction programmes, including the Northern Line Extension, TfL achieved zero waste to landfill with other waste sent for recovery by energy from waste over the same period. Considering the above, Sustainalytics is of the opinion that the TfL Green Bond Framework 2020 is aligned with the Issuer's overall sustainability strategy and initiatives and will contribute towards the goals and objectives outlined in the MTS and LES.

Well positioned to address common environmental and social risks associated with the projects

Sustainalytics recognizes that the use of proceeds from the Framework will have overall positive environmental impacts. However, Sustainalytics also acknowledges that potential environmental and social risks must be appropriately mitigated. Some key environmental and social risks associated with the eligible projects can include noise, air pollution, worker health and safety, stakeholder relations, and land use associated with large-scale infrastructure development. Sustainalytics considers that Transport for London can mitigate potential risks through the following policies and procedures:

- TfL applies the *Environmental Impact Assessment (EIA)* process for the assessment of the impacts on the environment of certain projects.^{14,15}
- Complying with *TfL Health, Safety and Environment Policy*, TfL is committed to (i) ensuring every journey is safe to the customers and users, (ii) providing safe and healthy environment to the employees, (iii) preventing pollution, protecting biodiversity, improving air quality and reducing waste and carbon emission.¹⁶ Additionally, TfL conducts a regular review on safety, health and environmental statistics to analyze the trends and take actions upon them.
- In compliance with the MTS and LES, TfL minimizes noise and vibration levels for the neighbors. When night or weekend construction is required, TfL is obliged to comply with the local authority and consults with residents before any potential noise for night works. When new roads or railways are developed, noise and vibration should be considered while planning the process to integrate those issues into the design.
- TfL is committed to stakeholder relations with an open and transparent approach. Transport for London engages stakeholders (businesses, non-profit organizations, academics and others) and integrates public input into the decision-making process.¹⁷ For example, TfL engaged a wide range of stakeholders to receive feedbacks on developing London-wide Low Emission Zone and ULEZ.¹⁸

¹¹ The ULEZ covers the current congestion charge zone of central London. It levies a daily charge on vehicles that do not meet the Euro 6 emissions standard for diesel, and Euro 4 for petrol (and Euro 3 for motorcycles). The charge is £12.50 for cars, vans and motorcycles, £100 for HGVs, buses and coaches. Eligible vehicles not paying the charge can be fined up to £160

¹² Electrive, "London ULEZ to expand to cover area 18x larger than before", (2018), at: <https://www.electrive.com/2018/06/11/london-ulez-to-expand-to-cover-area-18x-larger-than-before/>

¹³ The Ten Healthy Streets Indicators includes: clean air, pedestrians from all walks of life, easy to cross, shade and shelter, places to stop and rest; not too noisy; people choose to walk, cycle and use public transport; people feel safe; things to do and see; people feel relaxed.

¹⁴ Government of the United Kingdom, "Environmental Impact Assessment", at: <https://www.gov.uk/guidance/environmental-impact-assessment>

¹⁵ LEZ does not belong to the classes required for the EIA approach.

¹⁶ Transport for London, "TfL Health, Safety and Environment Policy", (2016), at: <http://content.tfl.gov.uk/tfl-health-safety-and-environment-policy.pdf>

¹⁷ Transport for London, "Transport for London – Transparency Strategy", (2015), at: <http://content.tfl.gov.uk/tfl-transparency-strategy.pdf>

¹⁸ Transport for London, "Changes to the Low Emission Zone (LEZ) and expansion of the Ultra Low Emission Zone (ULEZ): Report to the Mayor on the consultation", (2018), at: https://consultations.tfl.gov.uk/environment/air-quality-consultation-phase-3b/user_uploads/ulez-consultation-report-to-the-mayor.pdf

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Based on the above, Sustainalytics is of the opinion that TfL has implemented adequate risk mitigation measures and is well positioned to manage the environmental and social risks commonly associated with the eligible categories.

Section 3: Impact of Use of Proceeds

The three use of proceeds categories are recognized as impactful by GBP. Sustainalytics discusses below where the impact is specifically relevant in the local context.

Air Pollution: A Major Threat to Public Health

Air pollution including, particulate matters ("PM") such as PM_{2.5} and PM₁₀, and nitrogen dioxide (NO₂) represents critical health risks, having lifelong impact on human health from before birth until old age.¹⁹ Air pollution damages lung function growth during childhood and accelerates lung function decline during ageing, which ultimately lead to increasing vulnerability to lung diseases.²⁰ Moreover, evidences indicate a correlation between PM_{2.5} exposure and cardiovascular, respiratory, and lung cancer mortality.¹⁹ In London, a report commissioned by the City Hall estimated that 9,000 premature deaths were caused by long-term exposure to air pollution in 2010.²⁰

In 2013, road transport was the major source of air pollutants within the City of London, accounting for 68.79% of PM_{2.5} emissions, 55.48% of PM₁₀ emissions and 56.95% of NO_x emissions.²¹ Thus, reducing road transport air pollutants emissions is a key priority to improve air quality, as outlined by the City of London Air Quality Strategy and the LES Policy 4.2.1.²² Regarding PM_{2.5}, London met the EU Legal Limit²³ for the first time in 2011,²⁴ continuously decreasing the average annual concentration, which stood at 13.3 µg m⁻³ in 2016. However, this is slightly above the WHO's recommended annual mean concentration limit of 10 µg m⁻³. The "Roadmap to meeting WHO guidelines by 2030"²⁴ projects that London will exceed the above-mentioned target by 2030, with an average concentration of 8.0 µg m⁻³. Therefore, TfL's investment in measures to improve air quality including expansion of the ULEZ to the inner London area can assist the City in meeting the WHO recommended concentration for PM_{2.5}, as well as reducing the emissions of other particulate matters, nitrogen dioxides and pollutants.

Fostering Modal-Shifting Towards Clean Transportation

An increasing share of road transport emissions are non-exhaust emissions i.e. road wear, resuspension of particles and tyre and break wear,²⁵ highlighting the need to operate a modal shift from road transport towards walking, cycling and public transport.²⁴ This concern is encompassed by the Proposal 4.2.1.a of the LES,²⁶ and will support the MTS, whose target is to reach 80% of all trips in London by sustainable modes⁸ by 2041. In 2015, sustainable modes accounted for 64% of all trips, compared to cars for 36%. The delivery of the MTS is expected to increase sustainable modes' share by 4% in 2021 and 11% by 2031, and 80% by 2041 compared to a 2015 baseline.²⁷ Studies suggest that transport and urban planning are key to achieving

¹⁹ WHO, "Health risks of air pollution in Europe - HRAPIE project", (2013), at:

http://www.euro.who.int/_data/assets/pdf_file/0006/238956/Health_risks_air_pollution_HRAPIE_project.pdf

²⁰ Royal College of Physicians, "Every breath we take: the lifelong impact of air pollution", (2016), at:

https://www.london.gov.uk/sites/default/files/london_environment_strategy_0.pdf

²¹ City of London, "City of London Air Quality Strategy, Delivering healthy air in the City of London – 2019-2024", (2019), at:

<https://www.cityoflondon.gov.uk/business/environmental-health/environmental-protection/air-quality/Documents/City-of-London-Air-Quality-Strategy-2019-2024.pdf>

²² Policy 4.2.1. Reduce emissions from London's road transport network by phasing out fossil fueled vehicles, prioritizing action on diesel and enabling Londoners to switch to more sustainable forms of transport.

²³ The legal annual mean air quality limit value in the EU, which is set at a concentration below 25 µg m⁻³.

European Commission, "Air Quality Standards", at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32008L0050>

²⁴ Mayor of London, "PM_{2.5} in London: Roadmap to meeting World Health Organization guidelines by 2030", (2019), at:

https://www.london.gov.uk/sites/default/files/pm2.5_in_london_october19.pdf

²⁵ According to the London Atmospheric Emissions Inventory, 37% of PM₁₀ emissions in London is caused by the general wear of tyres and brakes.

City of London, "City of London Air Quality Strategy, Delivering healthy air in the City of London – 2019-2024", (2019), at:

<https://www.cityoflondon.gov.uk/business/environmental-health/environmental-protection/air-quality/Documents/City-of-London-Air-Quality-Strategy-2019-2024.pdf>

²⁶ Proposal 4.2.1.a The Mayor will promote and prioritize more sustainable travel in London, including walking cycling and public transport.

²⁷ Mayor of London, "Mayor's Transport Strategy: Supporting Evidence – Outcome Summary Report", (2017), at: content.tfl.gov.uk/mts-outcomes-summary-report.pdf

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modal shifts²⁸ and encourage friendly transport behavior.²⁹ This can create the right conditions to modal shifting, which ultimately lead to reduced non-exhaust emissions. In addition, providing opportunities for safe and active mobility can generate positive externalities, such as reducing noise pollution, congestion and accidents.^{30,31} As such, projects financed through the Framework including, new rail lines and line extensions, electric and hydrogen-powered buses, and cycling and walking infrastructure, could foster behavioral change towards sustainable modes of transport. For example, TfL estimates that large scale infrastructure planned by the MTS could increase public transport passenger use by 18%.²⁷ Sustainalytics is of the opinion that the proceeds will therefore support both the LES and MTS, contributing to modal shift of journeys towards sustainable modes and reducing transport-related air pollution.

The “Polluter-Pays” Principle: Impact on Air Pollutants and CO₂ Emissions from the Ultra-Low Emission Zone

London implemented the ULEZ in April 2019, enforcing the polluter-pays-principle, according to which the costs resulting from measures to prevent, reduce and control pollution must be borne by the polluter. Six months after its implementation, the ULEZ showed substantial improvements in air quality.³² Roadside concentration of NO₂ in the central zone fell by 36%, while road transport’s NO_x emissions have reduced by 31% compared to a scenario where there was no ULEZ. In addition, CO₂ emissions from road transport have reduced by 4% in the central zone. In 2017, GHG emissions from road transport accounted for 21% of London’s GHG emissions,³³ underlining the ULEZ contribution to GHG emissions mitigation. The compliance rate with ULEZ standards reached 77%, highlighting the success of its implementation. The ULEZ will be expanded to London’s North and South Circular boundary by 2021,¹⁸ for which TfL intends to use the proceeds of the framework. Sustainalytics is therefore of the opinion that the ULEZ scheme has contributed to measurable results, that will be further increased by the expansion of the scheme to the inner London area.

Sustainalytics is of the opinion that the use of proceeds categories can achieve positive impacts by fostering sustainable transport modes. The latter can reduce transport-related air pollutants, thereby limiting adverse health effects resulting from long-term exposure to air pollutants. The tangible results that have been achieved by the ULEZ demonstrate that projects carried out by TfL that aim at reducing air pollution and GHG emissions are credible, impactful and will further contribute to positive social and environmental impacts.

Alignment with/contribution to SDGs

The Sustainable Development Goals (SDGs) were set in September 2015 and form an agenda for achieving sustainable development by the year 2030. This green bond advances the following SDG goals and targets:

Use of Proceeds Category	SDG	SDG target
Clean transportation	9. Industry, Innovation and Infrastructure	9.1 Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all
	11. Sustainable Cities and Communities	11.2 By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in

²⁸ Bertolini, L., et al., (2003), “Urban Development without more Mobility by Car? Lessons from Amsterdam, a Multimodal Urban Region.” Environment and Planning A, at: <https://journals.sagepub.com/doi/abs/10.1068/a3592>

²⁹ Semenza, J., C., et al., (2008), “Public perception of climate change: voluntary mitigation and barriers to behavior change”, American Journal of Preventive Medicine, at: <https://www.sciencedirect.com/science/article/abs/pii/S0749379708006831>

³⁰ Creutzig, F., et al., (2012), “Decarbonizing urban transport in European cities: four cases show possibly high co-benefits”, Environmental Research Letters, at: <https://iopscience.iop.org/article/10.1088/1748-9326/7/4/044042/meta>

³¹ WHO, “Health Effects of Transport-related Air Pollution”, (2005), at: http://www.euro.who.int/_data/assets/pdf_file/0006/74715/E86650.pdf

³² Mayor of London, “Central London Ultra Low Emission Zone – Six Month Report”, (2019), at: https://www.london.gov.uk/sites/default/files/ulez_six_month_evaluation_report_final_oct.pdf

³³ Greater London Authority, “London Energy and Greenhouse Gas Inventory (LEGGI)”, (2017), at: <https://data.london.gov.uk/dataset/leggi>

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		vulnerable situations, women, children, persons with disabilities and older persons 11.6 By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management
Pollution prevention and control	3. Good Health & Well-Being	3.9.1 Mortality rate attributed to household and ambient air pollution
Renewable energy	7. Affordable and Clean Energy	7.2 By 2030, increase substantially the share of renewable energy in the global energy mix

Conclusion

TfL has developed the TfL Green Bond Framework 2020 under which it will issue green bonds and the use of proceeds to finance and/or refinance future and existing projects related to clean transportation, pollution prevention and control, and renewable energy. By focusing on reducing transport-related air pollutants and emissions, TfL will improve London's air quality, reduce adverse health impacts of air pollutants and decrease the total GHG emissions of the City's public transport system. Additionally, TfL's investments into solar power will increase the City's renewable energy generation and further support the transition to a low-carbon economy. The TfL Green Bond Framework 2020 outlines a process by which proceeds will be tracked, allocated, and managed, and commitments have been made for reporting on the allocation and impact of the use of proceeds.

Based on the above, Sustainalytics is confident that Transport for London is well-positioned to issue green bonds and that that TfL Green Bond Framework 2020 is robust, transparent, and in alignment with the four core components of the Green Bond Principles 2018.

Appendices

Appendix 1: Green Bond / Green Bond Programme - External Review Form Section 1. Basic Information

Issuer name:	Transport for London
Green Bond ISIN or Issuer Green Bond Framework Name, if applicable: <i>[specify as appropriate]</i>	TfL Green Bond Framework 2020
Review provider's name:	Sustainalytics
Completion date of this form:	January 20, 2020
Publication date of review publication: <i>[where appropriate, specify if it is an update and add reference to earlier relevant review]</i>	

Section 2. Review overview

SCOPE OF REVIEW

The following may be used or adapted, where appropriate, to summarize the scope of the review.

The review assessed the following elements and confirmed their alignment with the GBPs:

- | | |
|--|--|
| ☒ Use of Proceeds | ☒ Process for Project Evaluation and Selection |
| ☒ Management of Proceeds | ☒ Reporting |

ROLE(S) OF REVIEW PROVIDER

- | | |
|---|--|
| ☒ Consultancy (incl. 2 nd opinion) | ☐ Certification |
| ☐ Verification | ☐ Rating |
| ☐ Other <i>(please specify)</i> : | |

Note: In case of multiple reviews / different providers, please provide separate forms for each review.

EXECUTIVE SUMMARY OF REVIEW and/or LINK TO FULL REVIEW *(if applicable)*

Please refer to Evaluation Summary above.

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Section 3. Detailed review

Reviewers are encouraged to provide the information below to the extent possible and use the comment section to explain the scope of their review.

1. USE OF PROCEEDS

Overall comment on section (*if applicable*):

The eligible categories for the use of proceeds (i) Clean Transportation, (ii) Pollution prevention and control, and (iii) Renewable energy are aligned with those recognized by the Green Bond Principles 2018. Sustainalytics considers that the eligible categories will lead to positive environmental impacts and advance the UN Sustainable Development Goals, specifically SDG 3, 9, 7 and 11.

Use of proceeds categories as per GBP:

- | | |
|--|--|
| ☒ Renewable energy | ☐ Energy efficiency |
| ☒ Pollution prevention and control | ☐ Environmentally sustainable management of living natural resources and land use |
| ☐ Terrestrial and aquatic biodiversity conservation | ☒ Clean transportation |
| ☐ Sustainable water and wastewater management | ☐ Climate change adaptation |
| ☐ Eco-efficient and/or circular economy adapted products, production technologies and processes | ☐ Green buildings |
| ☐ Unknown at issuance but currently expected to conform with GBP categories, or other eligible areas not yet stated in GBPs | ☐ Other (<i>please specify</i>): |

If applicable please specify the environmental taxonomy, if other than GBPs:

2. PROCESS FOR PROJECT EVALUATION AND SELECTION

Overall comment on section (*if applicable*):

Transport for London's internal process for evaluating and selecting projects is managed by the "working group", which is led by Group Financial Accounting ("Accounting") department, with support from Corporate Finance, TfL's Safety, Health and Environment and City Planning teams. On an annual basis, the working group will review the aggregate pool of green expenditures for alignment with eligibility criteria listed in the Framework. The Issuer intends to fully allocate proceeds within 24 months after the issuance date of each Green Bond. Sustainalytics considers the project selection process in line with market practice.

Evaluation and selection

- | | |
|---|---|
| ☒ Credentials on the issuer's environmental sustainability objectives | ☒ Documented process to determine that projects fit within defined categories |
| ☒ Defined and transparent criteria for projects | ☐ Documented process to identify and |

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eligible for Green Bond proceeds

manage potential ESG risks associated with the project

- ☐ Summary criteria for project evaluation and selection publicly available
- ☐ Other (*please specify*):

Information on Responsibilities and Accountability

- ☒ Evaluation / Selection criteria subject to external advice or verification
- ☐ In-house assessment
- ☐ Other (*please specify*):

3. MANAGEMENT OF PROCEEDS

Overall comment on section (*if applicable*):

Transport for London's processes for management of proceeds is handled by the working group. Transport for London intends to allocate an amount equal to the net process to its general cash pool and track so that this cash is linked to its expenditure in the Eligible Green Project Categories. Pending full allocation, the balance of unallocated proceeds will be invested in cash or short-term, liquid money market instruments in accordance with TfL's Treasury Management Strategy & Policies. This process is aligned with market practice.

Tracking of proceeds:

- ☒ Green Bond proceeds segregated or tracked by the issuer in an appropriate manner
- ☒ Disclosure of intended types of temporary investment instruments for unallocated proceeds
- ☐ Other (*please specify*):

Additional disclosure:

- ☐ Allocations to future investments only
- ☒ Allocations to both existing and future investments
- ☐ Allocation to individual disbursements
- ☐ Allocation to a portfolio of disbursements
- ☐ Disclosure of portfolio balance of unallocated proceeds
- ☐ Other (*please specify*):

4. REPORTING

Overall comment on section (*if applicable*):

Transport for London intends to report allocation proceeds on its website on an annual basis until full allocation. TfL will report on total amount allocated to Eligible Green Projects, the year of investment/disbursement and the balance of unallocated proceeds. In addition, Transport for London is committed to reporting on relevant environmental impact metrics. Sustainalytics views Transport for London's allocation and impact reporting as aligned with market practice.

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Use of proceeds reporting:

- | | |
|--|--|
| ☐ Project-by-project | ☒ On a project portfolio basis |
| ☐ Linkage to individual bond(s) | ☐ Other (please specify): |

Information reported:

- | | |
|--|---|
| ☒ Allocated amounts | ☒ Green Bond financed share of total investment |
| ☒ Other (please specify): year of investment/disbursement, and balance of unallocated proceeds | |

Frequency:

- | | |
|--|--------------------------------------|
| ☒ Annual | ☐ Semi-annual |
| ☐ Other (please specify): | |

Impact reporting:

- | | |
|--|--|
| ☐ Project-by-project | ☒ On a project portfolio basis |
| ☐ Linkage to individual bond(s) | ☐ Other (please specify): |

Frequency:

- | | |
|--|--------------------------------------|
| ☒ Annual | ☐ Semi-annual |
| ☐ Other (please specify): | |

Information reported (expected or ex-post):

- | | |
|---|---|
| ☒ GHG Emissions / Savings | ☒ Energy Savings |
| ☐ Decrease in water use | ☒ Other ESG indicators (please specify): |
| | <ul style="list-style-type: none"> • Public transport journey time and network capacity benefits • Estimated modal shift from road transport to public transport, walking and cycling • Estimated total GHG emissions avoided • Reduction in energy consumption • Reduction of NO_x and particulate matter emissions |

Means of Disclosure

- | | |
|--|--|
| ☐ Information published in financial report | ☒ Information published in sustainability report |
|--|--|

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- ☐ Information published in ad hoc documents
- ☒ Other (please specify): The corporate level reporting will be in the form of existing reports (e.g. HSE and the TfL report). The project level reporting will be a separate report specifically to satisfy the requirements of the framework.
- ☐ Reporting reviewed (if yes, please specify which parts of the reporting are subject to external review):

Where appropriate, please specify name and date of publication in the useful links section.

USEFUL LINKS (e.g. to review provider methodology or credentials, to issuer's documentation, etc.)

TfL's Annual Report: <http://content.tfl.gov.uk/tfl-hse-annual-report-2018-19.pdf>

SPECIFY OTHER EXTERNAL REVIEWS AVAILABLE, IF APPROPRIATE

Type(s) of Review provided:

- ☐ Consultancy (incl. 2nd opinion) ☐ Certification
- ☐ Verification / Audit ☐ Rating
- ☐ Other (please specify):

Review provider(s):

Date of publication:

ABOUT ROLE(S) OF INDEPENDENT REVIEW PROVIDERS AS DEFINED BY THE GBP

- i. Second Party Opinion: An institution with environmental expertise, that is independent from the issuer may issue a Second Party Opinion. The institution should be independent from the issuer's adviser for its Green Bond framework, or appropriate procedures, such as information barriers, will have been implemented within the institution to ensure the independence of the Second Party Opinion. It normally entails an assessment of the alignment with the Green Bond Principles. In particular, it can include an assessment of the issuer's overarching objectives, strategy, policy and/or processes relating to environmental sustainability, and an evaluation of the environmental features of the type of projects intended for the Use of Proceeds.
- ii. Verification: An issuer can obtain independent verification against a designated set of criteria, typically pertaining to business processes and/or environmental criteria. Verification may focus on alignment with internal or external standards or claims made by the issuer. Also, evaluation of the environmentally sustainable features of underlying assets may be termed verification and may reference external criteria. Assurance or attestation regarding an issuer's internal tracking method for use of proceeds, allocation of funds from Green Bond proceeds, statement of environmental impact or alignment of reporting with the GBP, may also be termed verification.
- iii. Certification: An issuer can have its Green Bond or associated Green Bond framework or Use of Proceeds certified against a recognised external green standard or label. A standard or label defines specific criteria, and alignment with such criteria is normally tested by qualified, accredited third parties, which may verify consistency with the certification criteria.
- iv. Green Bond Scoring/Rating: An issuer can have its Green Bond, associated Green Bond framework or a key feature such as Use of Proceeds evaluated or assessed by qualified third parties, such as specialised research providers or rating agencies, according to an established scoring/rating methodology. The output may include a focus on environmental performance data, the process relative to the GBP, or another benchmark, such as a 2-degree climate change scenario. Such scoring/rating is distinct from credit ratings, which may nonetheless reflect material environmental risks.

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For more information, visit www.sustainalytics.com

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