

TRANSPORT FOR LONDON GREEN BOND

DNV GL SECOND PARTY OPINION

Scope and Objectives

Transport for London (TfL) is the owner and operator of the largest integrated transport networks in Europe. TfL is a statutory corporation and is a functional body of the Greater London Authority (GLA).

TfL is intending to issue a benchmark sterling green bond. The purpose of the bond is to finance TfL's investments in five project categories, as listed in Schedule 1 to this review.

DNV GL Business Assurance Services Limited ("DNV GL") has been commissioned to provide a second party opinion on the TfL Green Bond. We were commissioned to provide an assessment of the alignment of the bond with the Green Bond Principles (2014), and to review the environmental benefits of the investment project categories. Our methodology to achieve this is described under 'Work Undertaken' below. We were not commissioned to provide an independent assurance or other audit activity.

No assurance is provided regarding the financial performance of the bond, the value of any investments in the bond, or the long term environmental benefits of the transaction. Our objective has been to provide an assessment that the bond has met the criteria established on the basis set out below.

Responsibilities of the Management of TfL and DNV GL

The management of TfL has provided the information and data used by DNV GL during the delivery of this review. Our statement represents an independent opinion and is intended to inform TfL management and other interested stakeholders in the TfL Green Bond as to whether the established criteria have been met, based on the information provided to us. In our work we have relied on the information and the facts presented to us by TfL. DNV GL is not responsible for any aspect of the project categories referred to in this opinion and cannot be held liable if estimates, findings, opinions or conclusions are incorrect. Thus, DNV GL shall not be held liable if any of the information or data provided by TfL's management and used as a basis for this assessment were not correct or complete.

Basis of DNV GL's opinion

We have adapted our green bond assessment methodology, based on the Green Bond Principles¹, to create a TfL-specific Green Bond Assessment Protocol (see Schedule 2 below). This Green Bond Principles Assessment Protocol includes a set of suitable criteria that can be used to underpin DNV GL's opinion on the bond's alignment with the Green Bond Principles. The overarching principle behind the criteria is that a green bond should "enable capital-raising and investment for new and existing projects with environmental benefits".

As per our Green Bond Principles Assessment Protocol, the criteria against which the TfL Green Bond has been reviewed are grouped under the four Green Bond Principles:

¹ The Green Bond Principles are a set of voluntary process guidelines for issuing green bonds, initially issued in January 2014. The Principles were updated on March 27th 2015. In this assessment we have relied on the 2014 version of the Principles.

- **Principle One: Use of Proceeds.** The Use of Proceeds criteria are guided by the requirement that an issuer of a green bond must use the funds raised to finance eligible activities. The eligible activities should produce clear environmental benefits.
- **Principle Two: Process for Project Evaluation and Selection.** The Project Evaluation and Selection criteria are guided by the requirements that an issuer of a green bond should outline the process it follows when determining eligibility of an investment using Green Bond proceeds, and outline any impact objectives it will consider.
- **Principle Three: Management of Proceeds.** The Management of Proceeds criteria are guided by the requirements that a green bond should be tracked within the issuing organization, that separate portfolios should be created when necessary and that a declaration of how unallocated funds will be handled should be made.
- **Principle Four: Reporting.** The Reporting criteria are guided by the recommendation that at least annual reporting to the bond investors should be made of the use of bond proceeds and that quantitative and/or qualitative performance indicators should be used, where feasible.

The Green Bond Principles do not provide the basis for an assessment of environmental benefits. To achieve this, we used an additional set of TfL-specific Environmental Benefit Criteria (see Schedule 3 below) for each project category, and made an assessment using available information gathered during our review.

We used our Green Bond Principles Assessment Protocol to give an opinion as to whether the bond is aligned with the Green Bond Principles, and we used TfL-specific Environmental Benefit Criteria to give an opinion on the environmental benefits of the project categories.

Work undertaken

Our work constituted a high level review of the available information, based on the understanding that this information was provided to us by TfL in good faith. We have not performed an audit or other tests to check the veracity of the information provided to us. The work undertaken to form our opinion included:

- Creation of a TfL-specific Green Bond Assessment Protocol, based on the Green Bond Principles, as described above and in Schedule 2 to this Review;
- Use of an additional set of TfL-specific Environmental Benefit Criteria for each project category;
- Assessment of documentary evidence provided by TfL on the Bond and on company activities using this TfL-specific Green Bond Assessment Protocol and supplemented by a high-level desktop and media research. These checks refer to current assessment best practices and standards methodology;
- Review of externally published documents and internal analyses and documentation, and other sources of information on Environmental and Social Governance (ESG) risks relating to the activities of the company;
- Interviews on site with TfL managers and environmental experts;
- Assessment of each nominated project category against the TfL-specific Environmental Benefit Criteria. As part of this assessment we reviewed evidence, demonstrating for each project category the proposed environmental benefits, governance arrangements, measurement, mitigation actions, commitments and targets;
- Documentation of findings against each element of the criteria. Our opinion as detailed below is a summary of these findings.

Findings and DNV GL's opinion

DNV GL's findings are listed below, as per the four Green Bond Principles.

1. Principle One: Use of Proceeds. TfL's overarching goal is to "keep London working, growing, and making it a better place to live by providing safe, reliable and sustainable transport". TfL intends to use the proceeds of the offer to invest in eligible green projects, as defined by TfL's Framework for a TfL Green Bond. TfL has declared the eligible green project categories to be²:

- London Rail Capacity and Enhancements Projects
- World Class Capacity
- Station Upgrades and Station Capacity
- New Routemaster Buses (NRM) and bus fleet upgrades
- Cycling improvements

DNV GL concludes that these categories fall within a broadly defined category of sustainable transport. Sustainable transport, including mass urban transit and cycling, is commonly assessed as an eligible green bond category, as recognised by the Green Bond Principles and the Climate Bonds Initiative Taxonomy³.

Furthermore, evidence was provided to demonstrate that the investment contributes to at least two of the TfL's Strategic Environmental Areas, as outlined in TfL's Corporate Environment Framework:

1. Air quality
2. Carbon, energy and climate resilience
3. Resource management
4. Noise mitigation
5. Natural environment
6. Pollution prevention
7. Built environment

For further details, see Schedule 3.

2. Principle Two: Process for Project Evaluation and Selection. The eligible Bond project categories, which were determined by TfL prior to the issuance of the Bond, comprise projects included in TfL's investment programme, as set out in the TfL Business Plan approved by the TfL. DNV GL has reviewed the evidence and can confirm that the selected project categories meet the eligibility criteria defined by TfL in the Bond documentation, including TfL's *Framework for a TfL Green Bond*.

TfL has outlined the process by which it will allocate funds to eligible projects and described how often this will take place as well as what functions and teams within TfL will be responsible for selecting projects. The eligible green project categories are part of the TfL business plan and as such aim to increase the passengers using TfL services as well as the number of cyclists on the roads in London. These project categories also aim to contribute to TfL corporate level environmental targets.

² See Schedule 1 for details on the project categories

³ See <http://www.climatebonds.net/standards/taxonomy> for the Climate Bonds Initiative Taxonomy. The Green Bond Principles refer to "clean transportation" as an eligible category.

Sustainability assessments are conducted by TfL to assess the impacts from each project and identify mitigation actions. However, measurable impact objectives are not set per eligible project category.

- 3. Principle Three: Management of Proceeds.** DNV GL has reviewed evidence showing how TfL plans to trace the proceeds from the bond, from the time of issuance to the time of disbursement. The procedure includes a description of the functions and teams within TfL responsible for the tracking. The net proceeds will be placed in the TfL general cash pool, and the eligible instruments before disbursement are restricted to cash or short-term, liquid money market instruments. TfL has identified a pipeline of eligible projects with financing needs of some £4.6bn for the funding period 2014/15-2020/2021. This value of the project categories is well above the size of the planned bond. Of the £4.6bn, some £600 m of eligible project spend has been disbursed in the current funding period (2014-15).
- 4. Principle Four: Reporting.** TfL has confirmed that it will provide a management assertion on the use of proceeds on an annual basis in the Investor Relations section of its website. Furthermore, TfL will provide details of the proceeds invested by eligible green project category, updated on an annual basis. TfL publishes a "Health, Safety and Environment" report which includes corporate-level performance. The environmental impacts derived from eligible green bond categories will be included, but not isolated, within the existing performance metrics where applicable.

On the basis of the information provided by the issuer and the work undertaken, it is DNV GL's opinion that the TfL Green Bond is in line with the 2014 version of the Green Bond Principles, and that the bond meets the criteria established in the TfL-specific Green Bond Protocol. In addition, it is DNV GL's opinion that the project categories within the bond demonstrate clear environmental benefits as per the TfL-specific Environmental Benefit Criteria.

for DNV GL Business Assurance Services UK Limited

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About DNV GL

Driven by our purpose of safeguarding life, property and the environment, DNV GL enables organisations to advance the safety and sustainability of their business. Combining leading technical and operational expertise, risk methodology and in-depth industry knowledge, we empower our customers' decisions and actions with trust and confidence. We continuously invest in research and collaborative innovation to provide customers and society with operational and technological foresight.

With our origins stretching back to 1864, our reach today is global. Operating in more than 100 countries, our 16,000 professionals are dedicated to helping customers make the world safer, smarter and greener.

SCHEDULE 1: ELIGIBLE PROJECT CATEGORIES FOR THE TFL GREEN BOND

1. London Rail Capacity and Enhancement Projects

Examples of projects in this category are: London Overground (LO) capacity improvement projects, LO station upgrade projects, DLR capacity upgrades at stations, the expansion of double tracking along DLR routes, the replacement of DLR's existing rolling stock, double tracking of London Tramlink single track sections, additional platform and new tram infrastructure at Wimbledon, and four new trams to increase capacity.

2. World Class Capacity

The programme will provide additional capacity on the LU network beyond that delivered by the first wave of upgrades on the Victoria, Jubilee and Northern lines, with an aspiration to provide up to 36 trains per hour at peak times. The initiatives include a programme to minimise energy usage through implementing improvements to regenerative braking and increased coasting.

3. Station Upgrades and Station Capacity

This category includes projects aimed at increasing capacity and reducing congestion at some of London's busiest stations (particularly important due to London's growing population). The category also includes investment in the renewal of 26 stations to improve asset condition, the built environment and energy efficiency (i.e. the Integrated Stations Programme).

4. New Routemaster Buses ('NRM') and bus fleet upgrades

The NRMs are TfL owned hybrid buses, running on a combination of diesel and electricity. Part of the NRMs will have the new ultra-low emission Euro VI engine which is expected to cut CO₂ / NO_x emissions. This category would also fund the on-cost (over the equivalent diesel vehicle) of procuring low emission and low CO₂ buses, and the retrofit of Selective Catalytic Reduction ('SCR') onto buses to reduce their NO_x emissions.

5. Cycling improvements

TfL's cycling programme improves the safety of cycling and promotes its growth in London. The Cycle Superhighways programme is delivering cycle commuter routes from outer to central London. The better junctions programme comprises a set of high-profile junctions which are recognised barriers to cycling, and where substantial changes could be made to improve vulnerable road user safety and utility.

SCHEDULE 2: DNV GL'S GREEN BOND ASSESSMENT PROTOCOL

Principle	Criteria / Requirements	Work undertaken	Findings
1	Type of Bond: There are currently four types of Green Bonds included in the Green Bonds Principles: Green Use of Proceeds Bond, Green Use of Proceeds Revenue Bond, Green Project Bond, and Green Securitised Bond.	We interviewed selected personnel from TfL senior management, and reviewed the available evidence to understand how the structure of the Bond, as defined by TfL, meets the categorisation of the GBPs.	The reviewed evidence confirms that the Bond falls in the category: Green Use of Proceeds Bond.
	Green project categories: The issuer should declare the eligible green project categories in the use of proceeds section in the legal documentation for the security.	We interviewed selected personnel from TfL senior management and reviewed the specified evidence to understand how the structure of the Bond meets the categorisation of the GBPs.	TfL intends to use the proceeds of the offer to invest projects within eligible Green projects categories, as defined by TfL and set out in Schedule 1 to this Opinion.
	Environmental benefits: All designated green bond categories should provide clear environmental benefits that can be described and, where feasible, quantified or assessed.	<p>For each nominated green bond project category we reviewed the specified documentation, conducted research and undertook interviews with TfL managers and environmental experts to find evidence of: clear identification and assessment of related environmental benefits, government arrangements, processes and metrics to measure environmental performances.</p> <p>We did not undertake activities to assess the operational environmental performance of the company e.g. relating to existing operating processes.</p>	<p>The environmental benefits for each eligible green project category have been described.</p> <p>All of TfL's eligible green bond categories fall within a broadly defined category of sustainable transport. Furthermore, evidence was provided to demonstrate that they contribute to at least two of the TfL's identified environmental areas</p> <ol style="list-style-type: none"> 1. Air quality: 2. Carbon, energy and climate resilience: 3. Resource management 4. Noise mitigation 5. Natural environment 6. Pollution prevention: 7. Built environment <p>For further details, see Schedule 3.</p>

Principle	Criteria / Requirements	Work undertaken	Findings
2	Investment-decision process: The issuer should outline the investment-decision process it follows to determine the eligibility of an individual investment using Green Bond proceeds.	We interviewed selected personnel from TfL senior management and reviewed the specified evidence to understand how investment decision making process of the Bond meets the categorisation of the GBPs.	The eligible Bond project categories, which were determined by TfL prior to the issuance of the Bond, comprise projects included in TfL's investment programme, as set out in the TfL Business Plan approved by the TfL Board. In addition, DNV GL has reviewed the evidence and can confirm that the selected project categories meet the eligibility criteria defined by TfL in the Bond documentation - contribute to at least two of TfL's identified environmental areas. See criterion '1c' above for more details. TfL has also outlined the process by which it will allocate funds to eligible projects and described how often this will take place as well as what functions and teams within TfL will be responsible for selecting projects.
	Impact objectives: If possible, issuers should work to establish impact objectives from the projects selected.	For each nominated green bond project category we reviewed the specified documentation, conducted research and undertook interviews with TfL managers and environmental experts to find evidence of: clear identification of related environmental impact objectives, mitigation actions, goals and targets.	The eligible green project categories are part of the TfL business plan and as such aim to increase the passengers using TfL services as well as number of cyclists on the roads in London. These project categories also aim to contribute to TfL corporate level environmental targets. Sustainability assessments are conducted to assess the impacts from each project and identify mitigation actions. However, measurable impact objectives are not set per eligible project category. For further details, see Schedule 3.
	Investment's overall environmental profile: Where applicable, the issuer should, as a first step, review the investments' overall environmental profile. The issuer should operate in accordance with relevant national and/or international laws, regulations, and agreements.	We interviewed selected personnel from TfL senior management, and reviewed the specified evidence to check there is no evidence that that the company is not operating in accordance with environmental national and/or international laws, regulations, and agreements.	TfL investments are assessed for environmental impacts using an established sustainability assessment scorecard as well as an independent Environmental Impact Assessment (if legally required, e.g. for DLR double-tracking projects and station upgrades). TfL has a clearly expressed commitment in their internal policies to conduct all its activities efficiently, to the highest ethical standards and in compliance with its legal obligations. We have also carried out a high-level media review of each project category included in the green bond and have found no definitive evidence to suggest that any of the project categories are or have been operating in breach of national regulations.

Principle	Criteria / Requirements	Work undertaken	Findings
	Issuer's environmental and social and governance framework: In addition to the Green Bond process, criteria and assurances that an issuer provides, many Green Bond investors may also take into consideration an issuer's overall environmental and social and governance framework.	We reviewed the specified documentation and interviewed selected personnel from TfL senior management, to understand TfL's overall ESG and sustainability profile.	Based on the evidence reviewed, we conclude that TfL's overall environmental, social and governance framework appears to promote positive ESG behaviour. The sustainability strategy is directly supporting the Mayor's plan for London and has the umbrella goal: to keep London working, growing and to make life in London better. Sustainability-related targets are set and the majority of them are closely aligned with core operations and increasing transport needs of the London population.
3	The net proceeds of Green Bonds should be moved to a sub-portfolio or otherwise tracked by the issuer and attested to by a formal internal process that will be linked to the issuer's lending and investment operations for projects.	We interviewed selected personnel from TfL senior management, and reviewed the specified evidence to understand how the structure of the Bond meets the GBPs tracking procedure.	The evidence reviewed shows how TfL plans to trace the proceeds from the bond, from the time of issuance to the time of disbursement. The procedure includes a description of the functions and teams within TfL responsible for the tracking. The net proceeds will be placed in the TfL general cash pool. At the end of each four weekly accounting period, an amount of accrued project spend for that period will be deducted from the balance of net proceeds. At each year end, when borrowing is passed down from TfL to its subsidiaries, the borrowing will be formally allocated against the full year spend for the eligible green project categories.
	So long as the Green Bonds are outstanding, the balance of the tracked proceeds should be periodically reduced by amounts matching investments made during that period.	We reviewed the specified evidence to understand how the structure of the Bond, as defined in the Offer Memorandum, meets the GBPs requirements for eligible instruments for unallocated proceeds.	The reviewed evidence suggests that TfL has a defined process to reduce the balance of the tracked proceed by amounts matching the investment made in eligible green project categories on a four-week period basis. This is in line with TfL's accounting periods. At each year end, when borrowing is passed down from TfL to its subsidiaries, the borrowing will be formally allocated against the full year spend for the eligible green project categories.

Principle	Criteria / Requirements	Work undertaken	Findings
	Pending such investments, it is recommended that the issuer make known to investors the intended types of eligible instruments for the balance of unallocated proceeds.	We interviewed selected personnel from TfL senior management, and reviewed the specified evidence to understand how the structure of the Bond, as defined by TfL, meets the GBPs requirements relating disclosing eligible instruments for the balance of unallocated proceeds.	The eligible instruments are cash or short-term, liquid money market instruments.
	The value of the bond should be smaller than or equal to the financing needs of the nominated projects. A comparison of the outstanding principal of the bond to the value of the financing needs of the nominated projects. The bond should be "over-collateralised" and/or a replacement project list should be drawn up.	We interviewed selected personnel from TfL senior management, and reviewed the specified evidence to understand how the structure of the Bond meets the GBPs requirements relating to the financing needs of the project categories, including the loan tenors.	TfL has identified a pipeline of eligible projects with financing needs of over £4.6bn between 2014/15 & 2020/21. This value of the eligible project categories is well above the size of the planned bond.
4	Reporting: Issuers should report at least annually, if not semi-annually, via newsletters, website updates or filed financial reports on the specific investments made from the Green Bond proceeds, detailing wherever possible the specific project and the dollars invested in the project.	We interviewed selected personnel from TfL senior management, and reviewed the specified evidence to establish TfL's commitment to report on qualitative/quantitative performance indicators relating to its activities.	TfL has confirmed that it will provide a management assertion on the use of proceeds on an annual basis in the Investor Relations section of its website. Furthermore, TfL will provide details of the proceeds invested by eligible green project category. The environmental impacts derived from completed projects within the eligible green project categories will be reported in TfL's "Health, Safety and Environment" report where performance metrics are included. It is noted that the reporting will not isolate the performance of individual projects.

SCHEDULE 3: TFL-SPECIFIC ENVIRONMENTAL BENEFIT CRITERIA

Project category	Environmental benefit criteria
1. London Rail Capacity and Enhancements Projects	<ul style="list-style-type: none"> • Resource management • Natural environment • Pollution prevention
2. World Class Capacity	<ul style="list-style-type: none"> • Carbon, energy and climate resilience • Noise mitigation • Pollution prevention
3. Station Upgrades and Station Capacity	<ul style="list-style-type: none"> • Carbon, energy and climate resilience • Resource management • Pollution prevention • Built environment
4. New Routemaster Buses (NRM) and bus fleet upgrades	<ul style="list-style-type: none"> • Air quality • Carbon, energy and climate resilience • Noise mitigation
5. Cycling improvements	<ul style="list-style-type: none"> • Air quality • Carbon, energy and climate resilience • Noise mitigation • Built environment