

Japan Railway Construction, Transport and Technology Agency
JRTT Sustainability Finance

DNV GL Post Issuance verification and periodical review



Oct. 2019

DNV GL Business Assurance Japan K.K.

Scope and Objectives

The scope of this report includes both Post Issuance Verification Statement and Periodical review of JRTT Sustainability Finance*¹ Issuances as Climate Finance(bond and loan) currently outstanding in FY 2018.

On Mar 27, 2019, Japan Railway Construction, Transport and Technology Agency (hereinafter “JRTT” or “Issuer”) issued JRTT Sustainability Finance (hereinafter “Finance”). The issuance value for the Finance is 55.3 billion JPY. JRTT has secured certification of the Finance from the Climate Bonds Initiative against the Climate Bonds Standard. DNV GL Business Assurance Japan Co., Ltd. (hereinafter referred to as “DNV GL”) conducted post issuance verification against Climate Bond Standards version2.1 (hereinafter “CBS v2.1”) and periodical review of the Finance eligibility assessment by using the Sustainability Bond Guidelines 2018 (ICMA, hereinafter “SBG”) and the Green Bond Guidelines (the Ministry of the Environment, Japan 2017, hereinafter “GBGLs”).

JRTT determined principle ‘We contribute to build safe, secure, eco-friendly transportation networks.’ for social contribution. Under its principle, JRTT executes various business includes sustainability eligible project portfolio “Railway Construction” and “Joint Ownership Shipbuilding”. JRTT defines its sustainable social contribution through its business associating its Finance eligible project with SDGs.

JRTT has used the proceeds of the Finance to refinance the nominated projects and assets falling under the following categories, as scheduled:

“Project 01, Railway Construction”

- No. R-2, Public railway ; Leased railway [Arterial railway(Main line and Interurban line)] *refinance
- No. R-3, Public railway ; Assigned railway [Public railway operated by Private sector] *refinance

Please refer to the schedule-1 for details.

DNV GL has been commissioned by JR TT to provide the initial(pre-issuance) and periodic(post-issuance) verification and review of the JR TT's eligibility of the Finance against the CBS v2.1 determined Climate Bonds Initiative (hereinafter "CBI"), as well as SBG and GBGLs. Pre-issuance verification which was conducted in January 2019 concluded the eligibility of railway construction against CBS v2.1 and related technical sector criteria. Our criteria and information covered to achieve this is described under 'Work Undertaken' shown below. The periodic review was based on information and documents provided by JR TT as of 19 Sep 2019. Finance has received the CBI certification and been certified as programmatic certification who issues repeated and multiple finance which contribute environmental sustainability.

No assurance is provided regarding the financial performance of the Finance, the value of any investments in the Finance, or the long term environmental benefits arising from the nominated projects. Our objective of these reviews has been to provide an assessment that the usage of the proceeds of the Finance has met the criteria established on the basis set out below.

The scope of this DNV GL opinion is included to the Climate Bonds Standard Version 2.1 ("CBS v2.1") and the following associated Sector Technical Criteria:

- **Low Carbon Transport**

[Low Carbon Land Transport and the Climate Bonds Standard (Version 1.0)]

Also, DNV GL includes other related criteria described in the section "Basis of DNV GL's opinion" for annual report review.

Responsibilities of the Management of JRTT and DNV GL

The management of JRTT has provided the information and data used by DNV GL during the delivery of this verification and review. Our statement represents an independent opinion and is intended to inform JRTT management and other interested stakeholders in the Finance 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 JRTT. DNV GL is not responsible for any aspect of the nominated assets 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 JRTT used as a basis for this assessment were not correct or complete.

Basis of DNV GL's opinion

DNV GL has conducted the verification against the CBS v2.1^{*1} and associated Sector Technical Criteria through the creation and execution of a verification protocol addressing each requirement of those standard and criteria. The detail of areas covered in the DNV GL verification is summarized in Schedule 2 below.

Our Protocol includes a set of suitable criteria that can be used to underpin DNV GL's opinion. The overarching principle behind the criteria is that a Finance should "enable capital-raising and investment for new and existing projects with environmental and social benefits".

As per DNV GL's Protocol for assessment, in addition to the CBS v2.1 above, DNV GL also considers the criteria against which the Finance has been reviewed are grouped under the four Principles (GBP^{*2}, SBP^{*3}, SBG^{*4}, GLP^{*5}, and GBGLS^{*6}) as follows:

- **Principle One: Use of Proceeds.** The Use of Proceeds criteria are guided by the requirement that an issuer of a Finance must use the funds raised to finance eligible activities. The eligible activities should produce clear environmental and/or social 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 Finance should outline the process it follows when determining eligibility of an investment using Finance 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 Finance 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 Sustainability Reporting to the finance stakeholders should be made of the use of finance proceeds and that quantitative and/or qualitative performance indicators should be used, where feasible.

*1: Climate Bonds Standard | version 2.1 (Climate Bonds Initiative)

*2: Green Bond Principles (June 2018, International Capital Market Association)

*3: Social Bond Principles (June 2018, International Capital Market Association)

*4: Sustainability Bond Guidelines (June 2018, International Capital Market Association)

*5: Green Loan Principles (2018, Loan Market Association, Asia Pacific LMA and LOAN SYNDICATION AND TRADING ASSOCIATION)

*6: Green Bond Guidelines, 2017 (March 2017, Ministry of the Environment, Japan)

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 JRTT 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 includes :

Pre Issuance (Initial) Verification/assessment (completed previously):

- Creation and execution of a Climate Bonds Standard Protocol, adapted to include the relevant Sector Technical Criteria for the Finance nominated projects and assets, as described above and in Schedule 2 to this Assessment;
- Assessment of documentary supporting documents provided by JRTT on the Finance and supplemented assessment by a high-level desktop research. These checks refer to current assessment best practices and standards methodology;
- Discussions with JRTT, and review of relevant documentation;
- Documentation of findings against each element of the criteria.
- Field survey and inspection against the projects and assets;

Post Issuance (Periodic) Verification and Assessment:

- Evaluation of the supporting documents provided by JRTT and related to the Finance issuance, high level desktop research, document reviews, and interviews with key personnel of the Issuer. These checks refer to best practices in current assessment and standard methodologies;
- Discussions with JRTT management and review of relevant documentation;
- Field survey and inspection against the projects and assets, if required;
- Review of the nominated projects and assets as described in Schedule 2;
- Documentation of findings in detail.

Our opinion as detailed below is a summary of these findings.

Findings and DNV GL's opinion

DNV GL has performed the Post Issuance Verification of the Finance (loan) issued 27th March 2019 by JR TT. It is DNV GL's responsibility to provide an independent verification statement on the compliance of the JR TT Finance with the CBS v2.1.

DNV GL conducted the verification in accordance with the CBS v2.1 and with International Standard on Assurance Engagements 3000 Assurance Engagements other than Audits or Reviews of Historical Information. The verification included i) checking whether the provisions of the CBS v2.1 were consistently and appropriately applied and ii) the collection of evidence supporting the verification.

DNV GL's verification approach draws on an understanding of the risks associated with conforming to the CBS v2.1 and the controls in place to mitigate these. DNV GL planned and performed the verification by obtaining evidence and other information and explanations that DNV GL considers necessary to give limited assurance that the Finance continues to meet the requirements of the CBS v2.1.

Based on the limited assurance procedures conducted, nothing has come to our attention that causes us to believe that the Finances are not, in all material respects, in accordance with the requirements of the CBS v2.1 and Associated Low Carbon Transport Technical Criteria. Furthermore, nothing has come to our attention that causes us to believe that the reported impacts associated with the nominated projects and assets are inaccurate.

DNV GL also conducted periodical review, other than post issuance verification against CBSv2.1, of the JR TT's annual report against to the criteria of GBP2018, SBP2018, SBG2018, GLP2018, and GBGLs2017 accordingly.

DNV GL's findings are listed below:

Principle One, Use of Proceed

JRTT has reported usage of the proceeds (total finance proceeds : 55.3 billion JPY) as refinance into following two projects under the eligible projects on its website.

Fig-1 shows the funded project in FY 2018 (except for R-4)

(1) Eligibility Criteria of Finance (refinanced):

Railway Construction (Project 01 R-2 and R-3)

Project 01 R-2 : Public railway ; Leased railway [Arterial railway(Main line and interurban line)]

Sub Total : 33.2 billion JPY

Project 01 R-3 : Public railway ; Assigned railway (Public railway operated by Private sector)

Sub Total : 22.1 billion JPY

Total : 55.3 billion JPY

Schedule-1 shows lists and details of sustainability projects

DNV GL reviewed the eligibility of the funded projects and assets to meet the criteria for the project categories above.

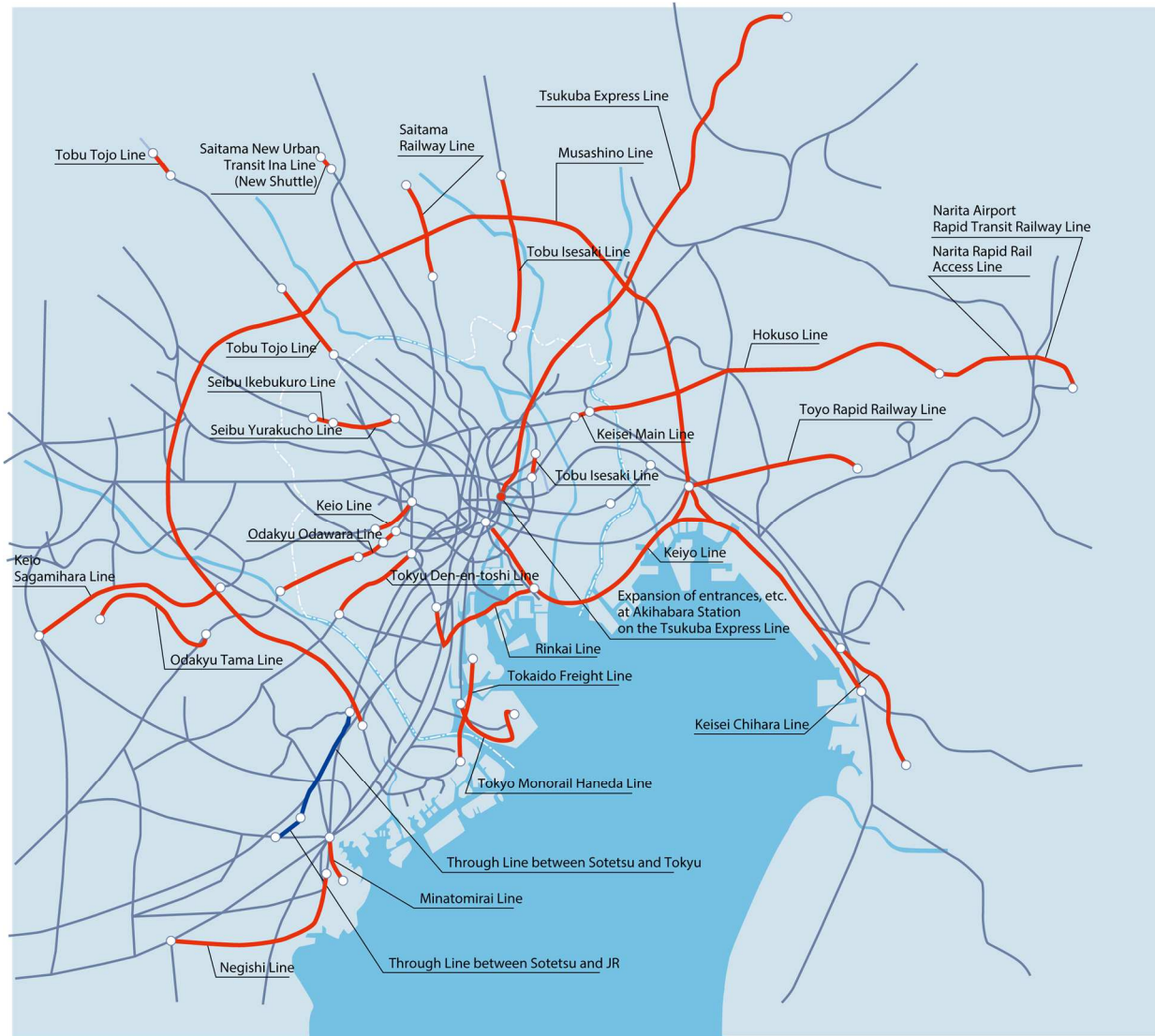


Fig-1 Project 01 representative railway construction

(legend Red line : in operation, blue line : under construction)

Principle Two, Process for Project Evaluation and Selection

The Finance's proceeds have been allocated solely to refinance the projects and assets as defined in Schedule 1. As for the negative impact caused by these projects, appropriate countermeasures and practical action plans which comply with relevant regulations and laws have been taken and will be taken after the evaluation by JRTT. DNV GL confirmed that JRTT resulted that its effect is limited and appropriate action will be executed if required.

Principle Three, Management of Proceeds

DNV GL has reviewed evidence showing how JRTT traced the proceeds from the Finance (loan or Bond, from the time of issuance to the time of disbursement). The full amount of the proceeds fund has been allocated promptly. The details of the disbursement value are tracked using JRTT's internal protocol. At the end of each financial period (fiscal year), JRTT manages the outstanding balance of the Finance.

DNV GL confirmed with the evidences showing by JRTT that full 55.3 billion JPY has been allocated at the end of the FY 2018 (Mar. 2019) as refinance, as scheduled.

As stated above, DNV GL provides no assurance regarding the financial performance of the Finance, the value of any investments in the Finance, or the effects of the transaction.

Principle Four, Reporting

JRTT has confirmed that annual report includes and maintain a dedicated section on the Finance in its website. This includes the project and value of the proceeds invested, as well as the associated qualitative and quantitative environmental impacts based on the MLIT data. Since annual report provided representative information and data which can be officially available, it may not align with FY 2018 activities. JRTT will update those information and data when it is available in timely manner.

JRTT disclosed environmental and social benefit and management proceeds on its web site.

<https://www.jrtt.go.jp/05Ir/ir-sustainabilityfinance.html> (Reporting)

- CO₂ emission per transportation unit (FY 2017)
- Numbers of passenger of eligible railway project (representative line) (FY 2016)
- FY 2018 Fund amount of allocation and outstanding
- FY 2018 Refinance share
- FY 2018 Project progress (funded amount)

Project progress has been published in the followings in its web site

- Environmental report 2019
- FY 2018 Annual business report
- FY 2018 Annual financial report
- FY 2018 Annual financial statement
- FY 2018 project report
- Finance information report

Project progress information above includes other than project funded FY 2018

Table-1 shows the qualitative and quantitative environmental impacts by JRTT sustainability finance project, Railway Construction, published by MLIT. CO₂ emission per unit(passenger and freight) is comparably lower enough than other transportation categories.

MLIT : Ministry of Land, Infrastructure, Transport and Tourism, Japan

Table-1 CO₂ emission per unit(passenger and freight) (2017)
reference : MLIT

category	passenger : g-CO ₂ /p-km	freight : g-CO ₂ /t-km
Private light vehicle	137	1,177
Cargo vehicle	-	232
Airplane	96	-
Bus	56	-
Ship	-	38
<u>Railway</u>	<u>19</u>	<u>20</u>

DNV GL Business Assurance Japan K.K.

30th. Oct. 2019



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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.

1. Schedule-1 JRTT Sustainability finance nominated project/asset portfolio ^{*1}

Table JRTT Sustainability Finance Project/Asset Portfolio (Project No. 01)

Project No.	Nominated Project/Asset Portfolio	Sustainability Project Category	Sustainability Project Sub-Category	Funded amount in FY 2018	Remarks	
01	R-1	Public railway ; Railway Project under the Urban Railway Convenience Improvement Law (Projects to Enhancement the convenience of urban railways)	<ul style="list-style-type: none"> •Clean transportation •Affordable basic infrastructure 	<ul style="list-style-type: none"> •rail (electric) •transportation(public) 	-	Railway Construction (Construction Account) : Nominated Project •Eastern Kanagawa Lines•etc
	R-2	Public railway ; Leased railway (Arterial railway(Main line and Interurban line))	<ul style="list-style-type: none"> •Clean transportation •Affordable basic infrastructure 	<ul style="list-style-type: none"> •rail (electric) •transportation(public) 	33.2 billion JPY	Railway Construction (Construction Account) : •Keiyo line •Musashino line•etc
	R-3	Public railway ; Assigned railway (Public railway operated by Private sector)	<ul style="list-style-type: none"> •Clean transportation •Affordable basic infrastructure 	<ul style="list-style-type: none"> •rail (electric) •transportation(public) 	22.1 billion JPY	Railway Construction (Construction Account) : •Minatomirai 21 line•Odakyu Odawara line•etc
	R-4	Public railway ; Railway Project under the Act on Special Measures concerning Integrated Promotion of Residential Land Development and Railway Construction in Major Urban Areas (Urban railway)	<ul style="list-style-type: none"> •Clean transportation •Affordable basic infrastructure 	<ul style="list-style-type: none"> •rail (electric) •transportation(public) 	-	Railway Construction (Construction Account) : Nominated Project •Joban new line (TX line)
Total exposure :				1,791,662,509,171 JPY as installment amounts (FY 2018)		
Fund amount;				55,300,000,000 JPY(FY 2018)		

2. Schedule-2 CBS v2.1 Verification criteria

Summary criteria for assertions of compliance with the CBS v2.1

The criteria against which the relevant projects and assets have been reviewed prior to their inclusion in the portfolio of eligible projects and assets for the Finance are grouped under the requirements as detailed within the CBS v2.1 and associated Sector Technical Criteria.

DNV GL has verified that JRTT conforms with all requirements here based on the evidences provided JRTT's relevant documents and interview through verification. Hereafter 'bond' also suggests finance, both bond and loan. These requirements broadly include:

Part A: General Requirements

Area	Requirement
Nominated Projects & Assets	A decision-making process shall be maintained to determine the continuing eligibility of the nominated projects and assets.
Use of Proceeds	Net proceeds of the bond must be allocated to nominated projects and assets.
Non-Contamination of Proceeds	The net proceeds of the bond shall be credited to a sub-account, moved to a sub-portfolio or otherwise identified in an appropriate manner, and documented.
Confidentiality	Information about the nominated projects and assets shall be provided to the Verifier and to the Climate Bonds Standard Board to support the assessment of conformance with the Climate Bonds Standard. The information disclosed to the Verifier and the Climate Bond Standard Board may be subject to confidentiality arrangements.
Reporting	There are specific requirements in respect of reporting on use of proceeds and nominated projects and assets.

Part B: Low Carbon Contribution - Eligible projects and physical assets

Nominated projects and assets include financing of, or investments in, projects and assets which enable the mitigation of greenhouse gases, as detailed in Schedule 1.

Area	Requirement
Low Carbon Transport	All infrastructure, infrastructure upgrades, rolling stock and vehicles for electrified public transport pass this criterion, including electrified rail, trams, trolleybuses and cable cars

Part C: Bond structures

Area	Requirement
Project Holding	The issuer of a climate bond shall continue to hold nominated projects and assets which have a value at least equal to the original principal amount of the bond at the time of issuance or the amount outstanding as the case may be.
Earmarking	The Issuer of the bond shall maintain the earmarking process to manage and account for funding to the nominated projects and assets.

3. Schedule-3 Sustainability Finance Eligibility Assessment Protocol

Checklist-1 Sustainability Finance Guideline (SBG) Eligibility checklist

Finance means JR TT’s general proceeds instruments including both bond and loan. Hereafter ‘bond/BOND’ also suggests both bond and loan, official bond statement and loan document. JR TT Sustainability Finance Framework, official bond statement and loan document, etc. will be published for explanation to investor on JR TT’s website as follows;

<https://www.jrtt.go.jp/05Ir/ir-sustainabilityfinance.html>

Following (1)~(4) are based on Sustainability Bond Guideline (ICMA, 2018) “SBG” referring to Green Bond Principle (ICMA, 2018), Social Bond Principle (ICMA, 2018). DNV GL established checklist according to the above guideline and principles. DNV GL describes our findings in the checklists based on the evidences provided JR TT’s relevant documents and interview through verification.

(1) SBG-1 Use of proceeds

Ref.	Criteria	Requirements	DNV GL Findings
1a	Type of bond	The bond must fall in one of the following categories, as defined by the Sustainability (Green and Social) Bond Principles: <ul style="list-style-type: none"> • Sustainability Use of Proceeds Bond • Sustainability Use of Proceeds Revenue Bond • Sustainability Project Bond • Sustainability Securitized Bond 	The reviewed evidence confirms that the BOND falls in the category: Green/Social(Sustainability) Use of Proceeds Bond.
1b	Project Categories	The cornerstone of a Sustainability Bond is the utilization of the proceeds of the bond which should be appropriately described in the legal	As identified by the purpose of the loan is to use the proceeds to finance and refinance for projects falling under the following categories ; FY 2018, proceeds 55.3 billion JPY has been allocated to the <i>Gothic, Italic and</i>

Ref.	Criteria	Requirements	DNV GL Findings
		documentation for the security.	<p><u>underscored</u> projects</p> <p><Railway Construction></p> <ul style="list-style-type: none"> - Public railway ; Railway Project under the Urban Railway Convenience Improvement Law (Projects to Enhancement the convenience of urban railways) - Public railway ; Leased railway (Arterial railway(Main line and Interurban line) - Public railway ; Assigned railway (Public railway operated by Private sector) - Public railway ; Railway Project under the Act on Special Measures concerning Integrated Promotion of Residential Land Development and Railway Construction in Major Urban Areas (Urban railway) <p><Joint Ownership shipbuilding></p> <ul style="list-style-type: none"> - Joint ownership shipbuilding (freight and passenger ship) <p>DNV GL's assessment concluded that these asset and project would present eligible project against green and social bond principles (as sustainability bond) and green loan principles. Above information was included in official loan document issued by JRJT. DNV GL concluded that 1b requirement is satisfied. In case that new project is nominated, JRJT will evaluate and its eligibility and disclose it as official document.</p>
1c	Environmental and Social benefits	All designated Sustainability Project categories should provide clear environmentally sustainable benefits, which, where feasible, will be quantified or assessed by the issuer.	<p>DNV GL, as CBI verifier, assessed and verified eligibility of Railway construction project portfolio through relevant criteria such as Low carbon land transportation as well as CBS. Railway construction project portfolio also has social benefit. Joint ownership shipbuilding project portfolio aligns with mainly social benefit and also have environmental secondary benefit (CO₂ emission reduction and prevent marine pollution).</p> <p>DNV GL confirmed that JRJT evaluate its benefit qualitatively and quantitatively as much. DNV GL also confirmed that JRJT determines the relationship between</p>

Ref.	Criteria	Requirements	DNV GL Findings
			<p>those projects and SDGs mapping based on the MLIT policy and ICMA document/17/.</p> <p>DNV GL reviewed JRTT provided document and explanation that JRTT already identified the environmental risk and addressed appropriate countermeasures. DNV GL concluded that 1c requirement is satisfied.</p>
1d	Refinancing share	In the event that a proportion of the proceeds may be used for refinancing, it is recommended that issuers provide an estimate of the share of financing vs. re-financing, and where appropriate, also clarify which investments or project portfolios may be refinanced.	<p>The proceeds of the BOND, in their entirety has been allocated to sustainability project described schedule-1 as refinance, project 01 in FY 2018. Refinance was as follows</p> <p>-Refinance to Railway construction project portfolio (all for refinance)</p> <p>Identification of finance or refinance has been disclosed to investor in official document.</p>

(2) SBG-2 Process for Project Selection and Evaluation

Ref.	Criteria	Requirements	DNV GL Findings
2a	Investment-decision process	<p>The issuer of a Sustainability Bond should outline the decision-making process it follows to determine the eligibility of projects using Sustainability Bond proceeds. This includes, without limitation:</p> <ul style="list-style-type: none"> • A process to determine how the projects fit within the eligible Sustainability Projects categories identified in the Green Bond Principles and Social bond principle; • The criteria making the projects eligible for 	<p>As per the JRTT sustainability finance framework, the issuer has set out the following criteria for project selection. Eligible project (portfolio) means alignment with their corporate philosophy and basic environmental policy. In this sustainability bond, JRTT has decided eligible project portfolio overarching it and considering the compliance with relevant external criteria such as Climate bonds standards v2.1 (including sector criteria), listed below.</p> <p><reference criteria></p> <ol style="list-style-type: none"> 1. Climate Bonds Standard version 2.1 (Climate Bonds Initiative) and technical criteria (Low carbon land transportation)

Ref.	Criteria	Requirements	DNV GL Findings
		<p>using the Sustainability Bond proceeds; and</p> <ul style="list-style-type: none"> • The environmental and social sustainability objectives • 	<ol style="list-style-type: none"> 2. Green Bond Principles (June 2018, International Capital Market Association) 3. Social Bond Principles (June 2018, International Capital Market Association) 4. Sustainability Bond Guidelines (June 2018, International Capital Market Association) 5. Green Loan Principles (2018, Loan Market Association, Asia Pacific LMA and LOAN SYNDICATION AND TRADING ASSOCIATION) 6. Green Bond Guidelines, 2017 (March 2017, Ministry of the Environment, Japan) <p><eligible project portfolio></p> <p>Railway Construction</p> <ul style="list-style-type: none"> - Clean Transportation - Essential and imperative transportation infrastructure - Low cost and easy access for various customers <p>Joint Ownership Shipbuilding</p> <ul style="list-style-type: none"> - Essential and imperative transportation infrastructure and various user convenience - Efficient distribution - Operation of routes to remote island - Clean Transportation and Pollution prevention and control <p>Those nominated project portfolio is discussed with JR TT's related department and responsibilities (JR TT boards). DNV GL also confirmed that JR TT determines the relationship between those projects and SDGs mapping based on the MLIT policy and ICMA document.</p> <p>DNV GL concluded that 2a requirement is satisfied through interview and document review.</p>
2b	Issuer's environmental and social and governance framework	In addition to information disclosed by an issuer on its Sustainability Bond process, criteria and assurances, Sustainability Bond investors may also take into consideration the quality of the issuer's overall framework and performance regarding environmental sustainability.	As per the interview and review documents provided by JR TT, DNV GL confirmed that JR TT has addressed to achieve both sustainable green and social activities according to environmental action(https://www.jr.tt.go.jp/01Organization/Csr/csr-kankyo.html) and domestic marine route for future creative plan published by MLIT(http://www.mlit.go.jp/common/001190904.pdf).

Ref.	Criteria	Requirements	DNV GL Findings
			<p>DNV GL also confirmed that JRTT has issued and intends to issue the loan and bonds continuously based on their framework which aligns with CBS requirement and CBI certification (programmatic certification)</p> <p>https://www.climatebonds.net/certification/get-certified https://www.climatebonds.net/programmatic-certification.</p> <p>DNV GL concluded that 2b requirement is satisfied</p>