



# Second Opinion

NSK Ltd.

July 14, 2023

## Sustainability-Linked Bond Framework

ESG Division  
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Rating and Investment Information, Inc. (R&I) has confirmed the alignment of the Sustainability-Linked Bond Framework (Framework) of NSK Ltd. dated July 2023 with the International Capital Market Association (ICMA)'s Sustainability-Linked Bond Principles 2023 and the Ministry of the Environment (MOE)'s Sustainability Linked Bond Guidelines 2022. This opinion is based on the following views.

### ■Outline of the Opinion

#### (1) Selection of Key Performance Indicators (KPIs)

The KPI is the “rate of reduction in CO2 emissions (Scope 1+2) of the NSK Group (with base year of FY2017).” NSK positions the “Mid-Term Management Plan (MTP2026),” which was formulated in May 2022, as a period for rebuilding corporate foundation for sustainable growth, and plans to address three management issues (growth with profitability, enhancement of managerial resources, and ESG management). For “ESG management,” one of them, it sets out a policy of promoting carbon neutrality by reducing CO2 emissions from its business activities and also helping customers to reduce CO2 emissions through its products and services. With regards to reduction of CO2 emissions from its business activities, it aims to achieve Scope 1+2 carbon neutrality by FY2035 with a quantitative target of 50% reduction in Scope 1+2 CO2 emissions compared to FY2017 by FY2026 as a milestone, in anticipation of requests from global automobile manufacturers, which are among its main customers, to suppliers to reduce emissions in order to reduce their supply chain emissions. The KPI selected is consistent with NSK's sustainability strategy and targets, and is considered an indicator of high strategic significance.

#### (2) Calibration of Sustainability Performance Targets (SPTs)

The SPT is to “reduce Scope 1+2 CO2 emissions by 50% from FY2017 by no later than FY2026, and is set to be consistent with NSK's reduction target for FY2026. Achieving the SPT requires an average annual reduction of 5.5%, a level exceeding what will be required for 1.5°C of the SBT Initiative, and NSK achieved reductions exceeding it over the four years from FY2018 to FY2021. Meanwhile, it has started making progress in switching to renewable energy for electricity consumption, which is expected to bring in reductions relatively quickly. In order to achieve the SPT, it will be necessary to take on challenging initiatives that involve the introduction of equipment, the transformation of manufacturing processes, and others. It is also higher than the reduction target for the industrial sector in the Plan for Global Warming Countermeasures and one established under the “Basic Policy for Carbon Neutrality by 2050” by the Japan Bearing Industry Association in November 2022 (both targeting a 38% reduction compared to FY2013). From the above, R&I has judged that the SPT is an ambitious target.

#### (3) Bond Characteristics

If the SPT is not met, the bond characteristics of sustainability-linked bonds issued under the Framework will change. While the details will be specified in a concrete manner in statutory disclosure documents in connection with the issuance of relevant bonds, the bonds will have one or more of the following characteristics: (i) purchase of emission rights and (ii) donation. (i) In the case of the purchase of emission rights, emission rights (credit or a certificate for the value of reducing CO2, etc.) in an amount corresponding to the ratio specified in the statutory disclosure documents to the amount financed through sustainability-linked bonds will be purchased before the redemption date. (ii) In the case of donation, an amount corresponding to the ratio specified in the statutory disclosure documents to the amount financed through

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sustainability-linked bonds will be donated to public interest incorporated associations, public interest incorporated foundations, international organizations, NPOs approved by local governments, or local governments, etc. whose purpose is to engage in environmental conservation activities before the redemption date. (i) The amount of the purchase of emission rights or (ii) the amount of donation is assumed to be at an appropriate level for sustainability-linked bonds. The bond characteristics are linked to the judgment results for the SPT and serve as an incentive for NSK to achieve the SPT.

#### (4) Reporting

NSK will disclose the latest KPI results and the judgment results for the SPT on its website at least once a year before the judgment date until sustainability-linked bonds issued under the Framework are redeemed.

#### (5) Verification

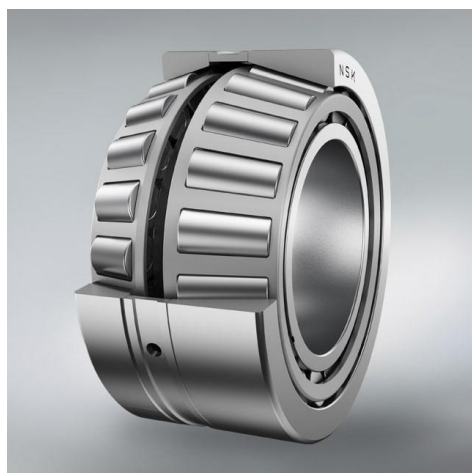
NSK will disclose Scope 1+2 emissions, which are a datum for KPI calculation, together with a review report by the Japan Quality Assurance Organization or other independent third parties, on its website at least once a year before the judgment date until sustainability-linked bonds issued under the Framework are redeemed.

## Overview of the Issuer

### (1) Business Overview and Business Strategy

- NSK was founded in Tokyo in 1916 to develop, manufacture and sell bearings, ball screws, steering and other products. It is highly ranked globally as a comprehensive bearing manufacturer, and makes use of tribology, material technology, analysis technology and mechatronic technology to commercialize products with high production technology. It supplies various types of bearings and parts, mainly high-function products for machine tools and steel equipment in addition to automobiles.
- It positions the “Mid-Term Management Plan (MTP2026) (FY2022 to FY2026), which was announced in May 2022, as a “period for rebuilding corporate foundation for sustainable growth,” and sets out a policy of promoting “business portfolio reform” by expanding the portfolio of Industrial Machinery business, growing the business for electric vehicles, improving the profitability of its core Bearings and Precision Machinery products to deploy the cash earned for the development of new products and new domains.

■NSK’s products (Left: Bearings for wind power generation equipment; Right: High-speed rotation ball bearings for electric vehicle drive motors)

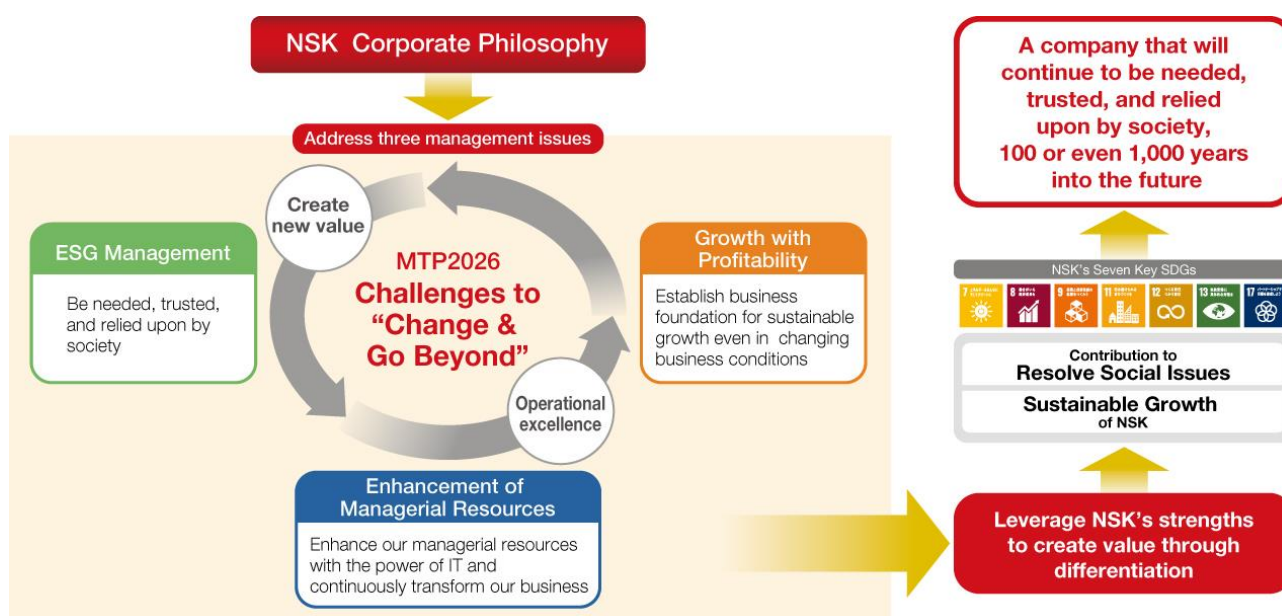


[Source: NSK]

## (2) Approach to Sustainability and Promotion of Carbon Neutrality

- Under its mission statement that advocates “a safer, smoother society,” “protecting the global environment” and “relationships between people,” NSK aims to balance contribution to resolving social issues with the achievement of sustainable growth as a company by creating value through collaboration with stakeholders. Further, it positions the “Mid-Term Management Plan (MTP2026)” as a period for rebuilding corporate foundation for sustainable growth, and aims to be a needed and trusted company that contributes to the development of a sustainable society by addressing three management issues (growth with profitability, enhancement of managerial resources, and ESG management).
- It has been working to promote carbon neutrality in “ESG management,” one of its management issues. NSK’s policy is to build a carbon-neutral society through the “Create and Utilize” approach. Its efforts revolve around not only reducing CO2 emissions from its business activities, but also helping customers reduce CO2 emissions through its products and services.

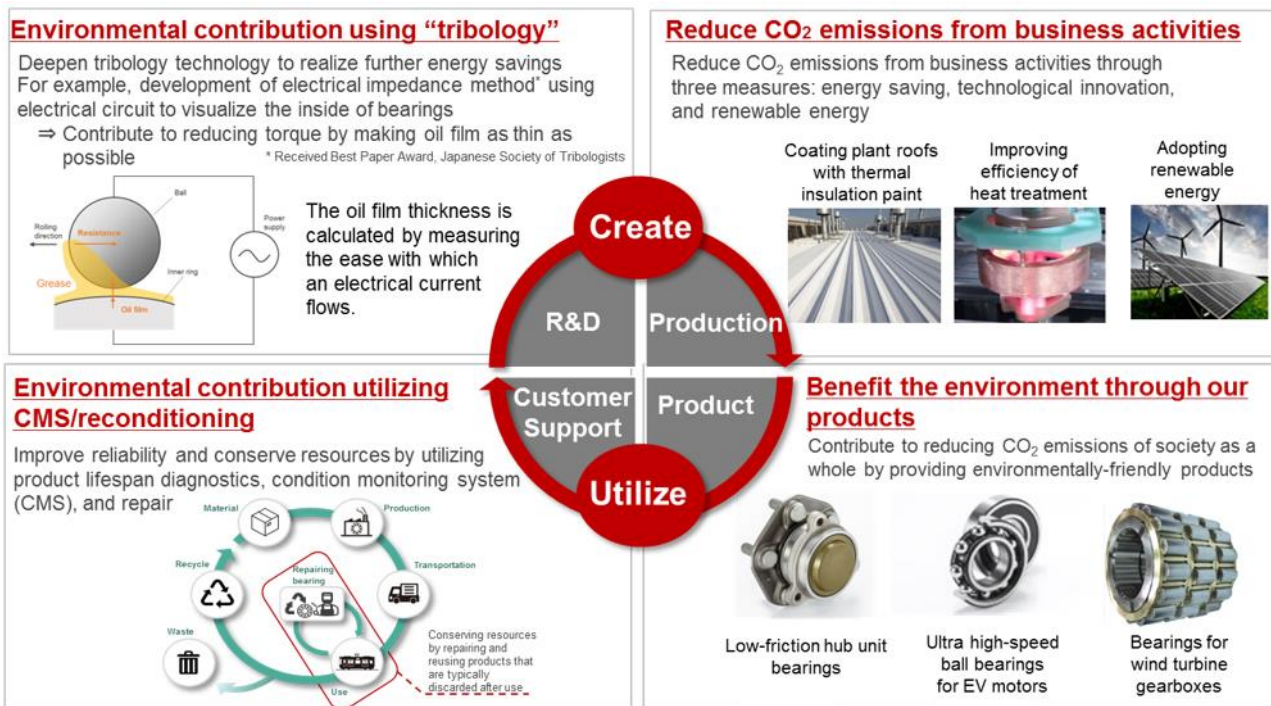
### ■ Three management issues in the “Mid-Term Management Plan (MTP2026)”



[Source: NSK]

- The targets for reducing CO2 emissions from its business activities that fall under “Create” are “Achieve 50% reduction in Scope 1+2 CO2 emissions compared to FY2017 by FY2026” and “Achieve Scope 1+2 carbon neutrality by FY2035.” These are targets set in anticipation of requests from global automobile manufacturers, which are among its main customers, to reduce emissions in the supply chain.
- In order to help customers reduce CO2 emissions through its products and services, it has been promoting initiatives such as offering products that help customers save energy, which fall under “Utilize,” through advanced tribology technology to achieve low torque of bearings that falls under “Create,” expanding the use of renewable energy through products such as bearings for wind power generation equipment, and extending product life and saving resources through the use of CMS and reconditioning services.

■NSK’s efforts for carbon neutrality



[Source: NSK]

# 1. Selection of KPIs

“Selection of KPIs” is aligned with the Sustainability-Linked Bond Principles from the following perspectives.

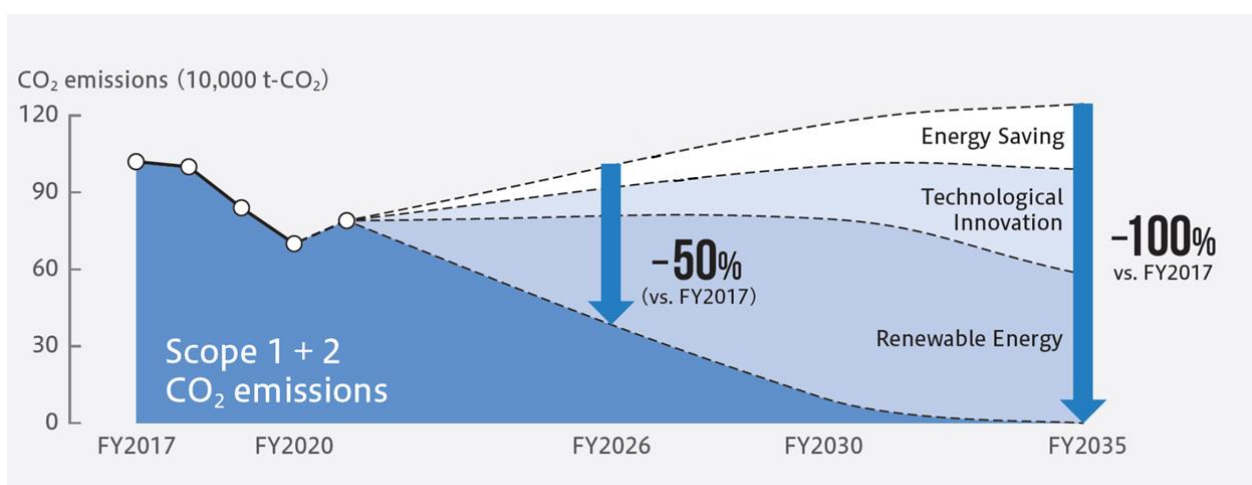
## (1) Abstract of KPIs

- The KPI of sustainability-linked bonds to be issued under the Framework is the rate of reduction in CO2 emissions (Scope 1+2) of the NSK Group (with base year of FY2017).

## (2) Materiality of KPIs

- NSK lists “ESG management” as one of the management issues to be addressed in the “Mid-Term Management Plan (MTP2026),” and has been accelerating its efforts to achieve carbon neutrality. It has set “Achieve 50% reduction in Scope 1+2 CO2 emissions compared to FY2017 by FY2026” and “Achieve Scope 1+2 carbon neutrality by FY2035” as targets for reducing CO2 emissions from its business activities.
- Since products manufactured by NSK use steel as a raw material, Scope 3 accounts for the majority of its total supply chain emissions. To reduce it, it is essential to change the process of steelmaking. Therefore, NSK believes that reducing CO2 emissions (Scope 1+2) from its business activities first serves as the pillar and the foundation of its activities for promoting carbon neutrality.
- To promote sustainability, NSK has established various committees whose members include CEO and officers in charge to deliberate and make decisions on the group-wide policies, confirm and review progress of initiatives, and share information across divisions. With regards to carbon neutrality initiatives, it positions the period of the current mid-term management plan as a period to launch activities. In addition to sharing information with those existing committees, it plans to hold meetings attended by multiple relevant officers and meetings chaired by CEO four times or more a year separately. The Carbon Neutrality Department will be the primary department responsible for managing progress of the KPI and will report to these meeting bodies as appropriate.
- Based on the above, R&I has concluded that the KPI has importance in NSK’s business strategy and is an appropriate indicator whose progress is managed organizationally.

■NSK’s targets for reduction in CO2 emissions (Scope 1+2)



[Source: NSK]

## 2. Calibration of SPTs

'Calibration of SPTs' of the Framework is in conformity with the ICMA's Sustainability-Linked Bond Principles from the following perspective

### (1) Abstract of SPTs

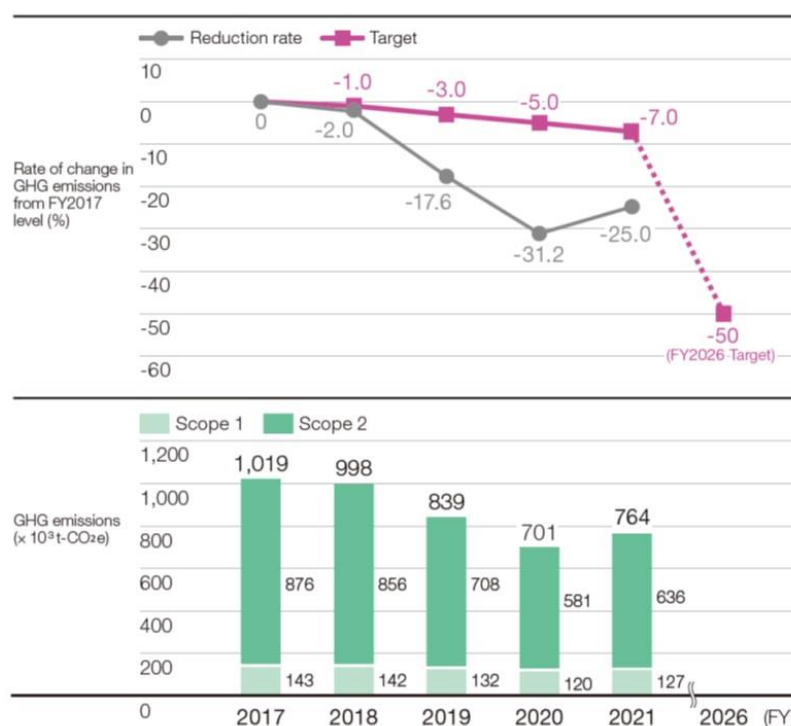
- The SPT is to reduce Scope 1+2 CO2 emissions by 50% from FY2017 by FY2026.

### (2) Ambitiousness of SPTs

#### ① Level of the SPT

- Achieving the SPT requires an average annual reduction of 5.5%, a level exceeding the target average annual reduction of 4.2% for 1.5°C of the SBT certification.
- NSK achieved reductions at an average annual rate of about 6.3% over the four years from FY2018 to FY2021. In order to achieve the SPT, it will need to reduce emissions at an average annual rate of about 5.0% for the remaining five years. It has already started making progress in switching to renewable energy for electricity consumption, which is expected to bring in reductions relatively quickly. In order to achieve the SPT, it will be necessary to take on challenging initiatives that involve the introduction of equipment, the transformation of manufacturing processes, and others.
- The Japanese government's Plan for Global Warming Countermeasures (approved by the Cabinet on October 22, 2021), which is a comprehensive plan to achieve carbon neutrality by 2050 and a 46% reduction by FY2030 (compared to FY2013), targets a 38% reduction (compared to FY2013) by the industrial sector. The "Basic Policy for Carbon Neutrality by 2050" formulated by the Japan Bearing Industry Association in November 2022 also targets a 38% reduction by FY2030 (compared to FY2013). NSK's target is at a high level compared with both the entire industrial circle and the bearing industry.
- From the above, R&I has judged that the SPT is an ambitious target.

#### ■ Changes in greenhouse gas emissions (CO2 equivalent)



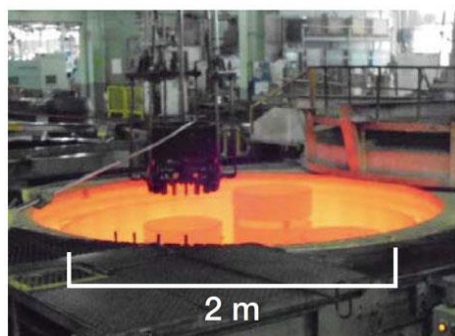
[Source: NSK]

② Relevance of Means for Achieving SPTs

- One of the sources of NSK’s Scope 1+2 CO2 emissions is the use of energy in the hardening process of parts. Steel, which is a raw material for bearing parts, etc., is heated to a high temperature after molding and subjected to hardening to increase its strength and obtain characteristics that can be used as machine parts. A typical steel hardening process uses radiant heat generated by using a heating furnace and heating the air inside. Heating furnaces can be used universally for many shapes and sizes of parts, however many use fossil fuels such as gas as fuel for burners in addition to requiring heating of the furnace body resulting in high energy consumption.
- NSK will promote electrification of the hardening process and reduction of energy consumption by replacing heating furnaces using fossil fuels and existing electric furnaces with the latest high-efficiency electric furnaces and high-frequency heat treatment equipment. By combining it with the decarbonization of electricity used, the company plans to achieve carbon neutrality of the entire manufacturing process.
- A mechanism of high frequency heat treatment equipment is that steel is put into the coil and high frequency electric current flows through the coil to heat the steel by using the electromagnetic induction phenomenon<sup>1</sup>. Unlike conventional furnaces, it can heat target parts only without a need to heat the furnace body, therefore energy consumption can be expected to be reduced compared with electric furnaces. However, in order to deal with a wide variety of bearing shapes, sizes, and materials that NSK has in its lineup, it is necessary to solve technical problems such as the development of an optimal heating process and the construction of facilities that are easy for operators to use. It is currently working on those challenges.
- As for the decarbonization of electricity consumption, the company has been gradually switching to green power or in-house power generation facilities using renewable energy for electricity used in its plants and offices. It has already switched to green power for 100% for all production bases in Europe, and has been working to achieve 100% green power in Japan, starting with some plants.
- It has also been steadily promoting other energy-saving initiatives, such as converting fuel for air conditioning equipment, upgrading to high-efficiency devices, switching to LED lighting, and repainting plant roof with thermal insulation paint.
- R&I has judged that NSK’s efforts to reduce emissions are good for achieving the SPT.

■High frequency heat treatment equipment

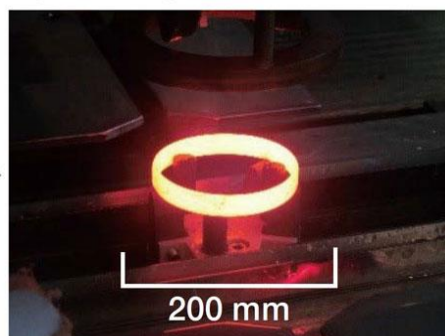
Conventional heat treatment furnace



Heating the entire furnace



High-frequency induction heat treatment






Heating the target part only

[Source: NSK]

<sup>1</sup> Passing electric current through a coil connected to a power source generates magnetic field lines around the coil, and placing a piece of metal in the coil generates a whirl current in a direction that prevents a change in magnetic flux in the metal. It is a phenomenon that heat is generated due to electrical resistance of the metal to this electric current, heating the metal. It is the same principle as in induction cooktops.

③ Contribution to the SDGs

- The initiatives to achieve the SPT will contribute to the following goals:

SDGs Targets	
  	<p>7.2 By 2030, increase substantially the share of renewable energy in the global energy mix</p> <p>7.3 By 2030, double the global rate of improvement in energy efficiency</p> <p>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</p> <p>13.1 Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries</p>

**(3) Relevance of SPTs**

- Regarding the relevance of the SPT, a Second Opinion has been obtained from R&I, an independent third party.

**3. Bond Characteristics**

'Bond characteristics' of the Framework is in conformity with the ICMA's Sustainability-Linked Bond Principles from the following perspective.

- The bond characteristics of sustainability-linked bonds issued under the Framework will vary depending on the status of achievement of the SPT. While the details will be specified in a concrete manner in statutory disclosure documents in connection with the issuance of relevant bonds, the bonds will have one or more of the following characteristics: (i) purchase of emission rights and (ii) donation as follows.

<Purchase of emission rights>

- ✓ In the SPT is not met, emission rights (credit or a certificate for the value of reducing CO2, etc.) in an amount corresponding to the ratio specified in the statutory disclosure documents to the amount financed through sustainability-linked bonds will be purchased before the redemption date.
- ✓ In terms of the type of emission rights to be purchased, J-Credit and Green Power Certificate, etc. are expected. The names of emission rights actually purchased, the quantity and amount of purchase will be disclosed on the website.

<Donation>

- ✓ If the SPT is not met, an amount corresponding to the ratio specified in the statutory disclosure documents to the amount financed through sustainability-linked bonds will be donated to public interest incorporated associations, public interest incorporated foundations, international organizations, NPOs approved by local governments, or local governments, etc. whose purpose is to engage in environmental conservation activities before the redemption date.
  - ✓ The names of entities, institutions, etc. to which donation is actually made and its amount will be disclosed on the website.
- (i) The amount of the purchase of emission rights or (ii) the amount of donation is assumed to be at an appropriate level for sustainability-linked bonds. The bond characteristics are linked to the judgment results for the SPT and serve as an incentive for NSK to achieve the SPT.



## 4. Reporting

'Reporting' of the Framework is in conformity with the ICMA's Sustainability-Linked Bond Principles from the following perspective.

- NSK will disclose the latest KPI results and the judgment results for the SPT on its website at least once a year before the judgment date until sustainability-linked bonds issued under the Framework are redeemed.

## 5. Verification

'Verification' of the Framework is in conformity with the ICMA's Sustainability-Linked Bond Principles from the following perspective.

- NSK will disclose Scope 1+2 emissions, which are a datum for KPI calculation, together with a review report by the Japan Quality Assurance Organization or other independent third parties, on its website at least once a year before the judgment date until sustainability-linked bonds issued under the Framework are redeemed.

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**[Expertise and Third-Party Characteristics]**

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