

Notice Regarding Issuance of Green Bonds

NGK INSULATORS, LTD. is set to issue its inaugural green bonds (unsecured straight bonds) in December 2021 as the finances for the achievement of “NGK Group Vision: Road to 2050” and “NGK Group Environmental Vision for 2050” formulated in April 2021.

1. Objectives and Backgrounds

Since the company's foundation in 1919, the NGK Group has provided society with new values centered around ceramics, while possessing an SDGs-like concepts. Still valuing this philosophy, we formulated a mid- to long-term vision “NGK Group Vision: Road to 2050” in April 2021 in order to continue contributing to the resolution of social issues in an era of extreme change.

Envisioning the future society of 2050, we will seize the enormous trends of rapid advancement toward the realization of carbon neutrality and a digital society as an opportunity for new development and work on promoting Five Transformations: (1) Promotion of ESG management, (2) Profitability improvement, (3) Focus on R&D, (4) Focus on commercialization, and (5) DX (digital transformation). With “Surprising Ceramics.” as the slogan for our unique ceramic technology, we intend to convert our business structure in anticipation of the “Third Foundation.”

We will position fields related to “carbon neutrality,” in which people coexist with the natural environment, and “digital society,” in which they can live securely, conveniently, comfortably, and in good health, as the focus fields and will develop business so that products related to these fields make up 80% of the company's sales in 2050. We plan to allocate a total of 300 billion yen in R&D expenses over the next 10 years and distribute 80% of that amount to both fields. We have established a goal of “New Value 1000” to achieve net sales of 100 billion yen from new businesses in 2030, which will be a checkpoint in the plan. We will invest management resources with a focus on promising development topics for creating new products and businesses.

The “NGK Group Environmental Vision for 2050,” meanwhile, is in place to meet social needs through business activities — i.e., “carbon neutrality,” “a recycling-oriented society,” and “harmony with nature.” Specifically, the NGK Group aims at zero CO₂ emissions for FY2050, with FY2025 and 2030 targets set at 550,000 tons (reduce by 25% from FY2013) and 370,000 tons (reduce by 50% from FY2013), respectively.

The proceeds of the green bonds will be used to finance carbon-neutral R&D and the group's decarbonization projects, all designed to put the vision into practice.

2. Overview of the green bonds

Name of bonds	Seventh Series of NGK INSULATORS, LTD. Unsecured Straight Bonds (With Inter-Bond Pari Passu Clause) (Green Bonds)
Maturity	7 years
Issuance amount	10 billion yen
Issuance period	December 2021(scheduled)
Lead bookrunners	Nomura Securities Co., Ltd., Mitsubishi UFJ Morgan Stanley Securities Co., Ltd., SMBC Nikko Securities Inc. and Daiwa Securities Co. Ltd.
Structuring agent*1	Nomura Securities Co., Ltd.

*1 Structuring agent is a party which helps issuance of green bonds through providing advice on developing a green bond framework and acquisition of external third-party assessments.

3. Projects eligible for the green bonds' financing

We have set projects for development and distribution of products and services contributing to realizing "carbon neutrality," "a recycling-oriented society," and "harmony with nature," and for investment in development of the manufacturing processes of such products, as eligible projects for green bond financing.

A. Distribution of environmentally friendly products and services

Eligible project categories	ICMA GBP*2 Category	Eligibility criteria and examples of projects
Batteries	Circular economy adapted products, production technologies and processes and/or certified eco-efficient products	R&D and manufacturing of batteries that meet the increasingly complex needs for storage batteries and power generation to promote renewable energy and develop smart grids. < Examples of projects > <ul style="list-style-type: none"> > NAS® batteries > Zinc rechargeable batteries > All-ceramic batteries (all-solid-state batteries)
Next-generation power semiconductors	Circular economy adapted products, production technologies and processes and/or certified eco-efficient products	Conventional silicon semiconductors used for motor control and power control/conversion (power semiconductors) will be replaced by ultra-low-power consumption semiconductors (SiC/GaN semiconductors, etc.), with R&D conducted to develop materials and parts required for a carbon-neutral society. < Examples of projects > <ul style="list-style-type: none"> > Gallium nitride (GaN) wafers > DCB and AMB substrates

CCU/CCS and hydrogen/ammonia	Circular economy adapted products, production technologies and processes and/or certified eco-efficient products	R&D focusing on technologies and products essential for capturing, storing and utilizing CO ₂ and for promoting utilization of hydrogen and ammonia. < Examples of projects > <ul style="list-style-type: none"> > CO₂ separation membrane > SOEC (solid oxide electrolysis cells) > Honeycomb structural reactor for synthetic fuel production
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B. The NGK Group's business and manufacturing activities for carbon neutral initiatives

Eligible project categories	ICMA GBP Category	Eligibility criteria and examples of projects
Clean energy utilization	Renewable energy	Development and introduction of carbon neutral technologies and facilities for possible applications to the NGK Group's manufacturing activities (including demonstrations and test operations). < Examples of projects > <ul style="list-style-type: none"> > Development of firing processes for ceramics, using hydrogen and ammonia as fuel > Demonstration testing of a firing kiln for ceramics, using hydrogen and ammonia as fuel
		Installation of facilities to switch to green electricity for use in the NGK Group's business activities < Examples of projects > <ul style="list-style-type: none"> > Installation of solar power generation facilities using NAS[®] batteries and zinc rechargeable batteries > Installation of solar power generation facilities > Procurement of green electricity > Procurement of carbon-neutral fuel
Energy-efficient manufacturing	Energy efficiency	Installation of high-efficiency facilities to improve energy efficiency of the NGK Group's manufacturing activities < Examples of projects > <ul style="list-style-type: none"> > Investment in high-efficiency facilities with excellent energy-saving performance to achieve carbon-neutral targets > R&D of new energy-efficient manufacturing processes

*2 GBP : Green Bond Principles

The green bond framework is aligned with the ICMA Green Bond Principles 2021 and the Green Bond Guidelines 2020 by the Ministry of the Environment and has obtained "Green 1(F)," the highest rating, provided by a third party (Japan Credit Rating Agency, Ltd.).

*The following URLs were added on December 17, 2021

Green Finance Framework Evaluation provided by JCR

<https://www.jcr.co.jp/en/greenfinance/green/>

<Reference>

NGK's green bond framework

<https://www.ngk-insulators.com/en/resource/pdf/ir/greenbond/framework.pdf>