°CICERO Shades of Green

Government of India
Green Bond Second Opinion

28 October 2022

Executive Summary

India is the world's second most populous country, with some 1.4 bn inhabitants, and the largest country in South Asia by its size. The main contributor to India's GHG emissions is fossil fuel combustion, in particular from its coal-based power sector (around 35% of total emissions) and industry (23% of total emissions), while agriculture contributes to 21% of overall emissions. India's Land Use, Land Use Change and Forestry sector is a net sink base on the most recently available figure. India's central 2030 climate targets include a reduction in emissions intensity of its GDP by 45% and increasing the share of non-fossil electricity sources to half of installed capacity, compared to 40% currently.

SHADES OF GREEN

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GOVERNANCE ASSESSMENT

GREEN BOND PRINCIPLES

Based on this review, this framework is found to be in line with the principles.

The framework covers a wide range of government expenditures intended to support the achievement of India's emissions intensity target, with the largest amounts expected to go to programmes and investments within renewable energy, climate change adaptation, clean transportation, biodiversity and nature conservation, as well as within pollution prevention and control. Eligible expenditures are mainly in the form of subsidies (direct and indirect), grants and investments, including some equity investments. The issuer has not clarified the share of proceeds that will cover related administrative costs such as salaries. Other project categories include waste and wastewater management, including waste-to-energy facilities, energy efficiency and green buildings. According to the issuer, the focus of the renewable energy category is expected to be solar power, followed by wind and small hydro, with the framework excluding hydropower plants larger than 25 MW as well as any biomass-based power generation with biomass originating from protected areas. Other stated exclusions include but are not limited to fossil fuel-based power generation, fossil-fuel based transportation, and landfill projects.

We rate the framework **CICERO Medium Green** and give it a governance score of **Good**. The overall shading of the framework assumes that expenditures within the five project categories mentioned above receive a majority of proceeds. While these project categories have been assigned all shades of green, the Medium Green shade is a common denominator across these categories, as they support expenditures within renewable energy, climate change adaptation and electrified transportation that are important in India's efforts to transition to a low carbon and climate resilient future. While the framework's procedures for management of proceeds and reporting appear adequate and the framework refers to national policies and international sustainability objectives, it remains somewhat unclear exactly how different expenditures' environmental impacts and risks will be assessed and weighted against each other. We are encouraged by the issuer's ongoing work to define metrics to assess expenditures.

Strengths

Overall, the framework reflects India's ambitions in terms of expanding renewable energy production and reducing its economy's carbon intensity, among others by supporting expenditures within renewable energy and electrification of the transport sectors, which are crucial in a 2050 perspective. The renewable energy category will support the roll out of well proven renewable energy technologies, as well as R&D within new technologies such as tidal energy. Efforts are needed in all sectors, and we view positively the issuer's efforts to reduce emissions also within agriculture as well as the framework's inclusion of research and development activities, which are also much needed in a 2050 perspective. The issuer expects that to reach its 2030 targets, additional efforts are needed and the issuer's motivation for issuing a green bond is to follow up on the government's commitment in its 2022-2023 budget to mobilize resources for green infrastructure and public sector projects aimed at reducing the economy's carbon intensity.

The framework's explicit exclusions of expenditures that involve extraction, production and distribution of fossil fuels or where the core energy source is fossil-fuel based, is a clear strength. This exclusion is particularly important given that India's power generation is still predominantly coal based and that any investments supporting coal-based power generation carry high lock in risks. The issuer has clarified that expenditures that indirectly support coal fired power plants, such as energy efficiency measures at such facilities, will not be financed. Note that the use of fossil fuels may still to some extent be supported under the framework, for example in the context of public transportation running on Compressed Natural Gas (CNG) or some fossil fuel use in wastewater systems. It is the responsibility of the Green Finance Working Committee (GFWC) to carefully implement the framework's exclusions across all project categories, to the extent possible.

We are encouraged by the issuer's intention to allocate a significant amount of proceeds to expenditures within climate change adaptation, as India is expected to be particularly vulnerable to the impacts of a changing climate. This comes in a context of national and regional policies that support climate change adaptation. Much of the responsibility for implementing adaptation policies lies with state governments, while several national policies target specific sectors, for example the National Initiative on Climate Resilient Agriculture.

Pitfalls

The principles for selection of green projects remain general, although it is positive that the Green Finance Working Committee will be supported by environmental expertise and that it will consider expenditures' alignment with the objectives of national environmental policies, the UN SDGs as well as with nationally defined minimum social safeguards. The GFWC's evaluation of expenditures will be guided by the Ministry of Environment, Forests and Climate Change, as well as a climate specialist from Niti-Aayog, a governmental resource centre for policy development. The issuer is committed to excluding controversial projects, such as those facing local resistance, and will ensure adherence to national minimum social safeguards as accorded by the Constitution as well as the laws of the country (such as to the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013, for any expenditures receiving proceeds. While the issuer has stated that exposure to physical climate change risks will be considered by the GFWC, it has not indicated specifically how this cross-cutting consideration will be implemented. We encourage the issuer to disclose, whenever possible, what specific climate resilience screening criteria will be used in project selection under the framework.

The broadly defined project categories create some uncertainty as to what type of expenditures could be financed, and wider climate risks associated with expenditures include risks of locking in emissions. Investors should be aware that there are lock-in risks associated with several project categories, such as financing new buildings with fossil fuel heating or water heating, expenditures that could indirectly support the expansion of thermal coal power generation and expenditures to support natural gas based public transport. Expenditures may also be associated with wider climate risks and impacts that the selection process does not address. For example,

expanding or upgrading railway infrastructure, although electric, may allow for transporting larger amounts of industrial freight to heavily emitting industries, with overall emissions increasing. Investors should also note that subsidies to support the expansion of renewable energy such as wind and solar power may be given to large power generation companies that are heavily involved in coal-based power generation.

The framework's project categories generally lack quantified thresholds. For example, no threshold is set for energy efficiency improvements, there is no minimum certification level required for green buildings and it is not defined what would constitute an energy and emissions efficient waste-to-energy plant. The broadness of some project categories also comes from the lack of reference to recognized sustainability standard and certifications, for example for agriculture and bamboo, where the framework does not clearly define what is meant by i.e. sustainable agriculture.

Wider climate risks are inherent to the framework's expenditures related to bioenergy, as the framework may support expenditures related to biofuels, solid biomass and bioenergy plants. While typically reducing emissions compared to fossil fuels, the lifecycle emissions associated with both liquid and solid biomass show large variations, and the sourcing of the biomass is crucial, in particular whether cultivation of crops causes land conversion directly and/or indirectly, with deforestation generally being a major risk. The risks associated with sourcing are mitigated by the framework's exclusion of biomass from protected areas and by the fact that deforestation is generally not considered to be a major issue in India (tree forest cover has recently increased). Furthermore, the issuer has clarified that any eligible plants generating electricity from biomass will only use waste based feedstock.

There are risks that expenditures eligible under the framework may support the substitution of natural forests with monoculture plantation, which are less biodiverse and less resilient to climate change. India's 2018 Draft National Forest Policy specifies the goal of keeping one-third of the country's land area under forest and tree cover and emphasizes the protection of natural forests. The issuer has also indicated that India has very strict laws against conversion of forest cover. However, according to the issuer, tree plantations are also included in the definition of forests. Further, the issuer has indicated that deforestation of non-protected forest areas and land use change may be allowed under special circumstances. As such, there remains the risk that natural forests may be substituted for monoculture tree plantations, which do not bring the same biodiversity-related benefits and are less resilient to climate change, diseases and pests. Inappropriate choice of tree species may also introduce new pests and diseases to local ecosystems and exacerbate water issues in semi-arid regions.

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1 Government of India's environmental management and green bond framework

Issuer description

India, the world's second-most populous country and its most populous democracy, occupies the southern peninsula of South Asia. It is the world's seventh-largest country by area and has been a federal republic since 1950, governed by a parliamentary system. The country is a multi-ethnic and multilingual society.

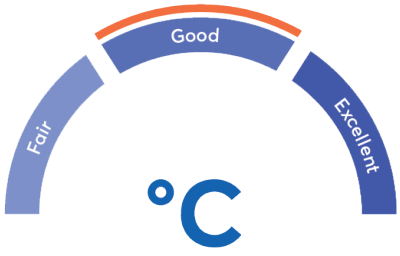
India's fast-growing economy is a hub for information and technology services. Services account for more than half of its GDP, industry for 26% and agriculture for 18%. Nearly two thirds of its population live in rural areas[1], but the share has been slowly declining over the last decade. Some 55% of its workforce work in the agricultural sector.

Governance assessment

India has national economy wide climate and environmental targets, with a key target being to reduce the emission intensity of its economy by 45% by 2030 compared to 2005. The country also aims at having some 50% cumulative electric power installed capacity from non-fossil fuel-based energy resources by 2030. India reports on emissions and progress towards its targets to the UNFCCC on a regular basis. The share of non-fossil fuel-based energy resources currently accounts for 40% of installed power capacity.

A dedicated inter-ministerial committee will select eligible expenditures among those submitted by different ministries. The committee is chaired by the Ministry of Finance, and also includes the Ministry of Environment, Forest and Climate Change, the Ministry of New and Renewable Energy and India's public policy think-tank Niti Aayog. It is positive that in its selection of eligible expenditures, the committee will be guided by environmental expertise, represented by the Ministry of Environment, Forests and Climate Change as well as the climate specialist from Niti Aayog. The issuer intends to select the projects with the highest environmental benefits and will consider expenditures alignment with the framework and its objectives, the UN Sustainable Development Goals and national environmental policies. Specifically how this will be done remains to be determined. While the issuer has stated that exposure to physical climate change risks will be considered by the GFWC, it has not indicated specifically how this will be assessed and mitigated.

The issuer will exclude controversial projects and has stated that it will examine projects and take into account associated social risks before taking a decision as to whether or not it is eligible under its green bond framework. The framework requires all eligible expenditures to adhere to minimum social safeguards, as defined by relevant national laws.



India's green bond framework contain relevant metrics for each project category and the issuer has confirmed that reporting will be transparent on methodologies and assumptions used. Allocation of proceeds will be externally reviewed, and the issuer may consider extending external review to impacts in the future.

The overall assessment of Government of India's governance structure and processes gives it a rating of **Good**.

[1] India - Rural Population - 2022 Data 2023 Forecast 1960-2021 Historical (tradingeconomics.com)

Risk exposure

Physical climate risks. Overall, India is expected to be highly vulnerable to climate change. Scenario analysis based on IPCC scenarios has been conducted to assess the country's main vulnerabilities to a changing climate, as described in India's second national communication to the UNFCCC. India's regions are subject to a wide range of climatic conditions, from cold Himalayan winters to tropical climate in the south. The changing climate is expected to impact India in a number of ways, including through water stress and scarcity, decreasing crop diversity and increasing climatic variability, and its large agricultural and fisheries sectors are particularly vulnerable.

Transition risks. Due to the profound changes needed to limit global warming to 2ºC, transition risk affects all sectors and countries. Economies that do not decarbonize in line with global efforts may face reduced competitiveness from carbon border adjustment mechanisms, shifts towards low-carbon and sustainable supply chains, the emergence of low-carbon technologies and business models, and changing investor preferences. Such factors may contribute to the repricing of emissions-intensive assets, with ensuing impacts on financial stability.

Environmental risks. Environmental degradation beyond climate change creates additional physical and transition risks for India and erodes resilience to physical climate impacts, with up to a third of the country's GDP coming from sectors with a high dependency on nature, such as agriculture and fisheries (https://www3.weforum.org/docs/WEF_New_Nature_Economy_Report_2020.pdf). Over 250 million people are estimated to depend on non-timber forest products (https://openknowledge.worldbank.org/handle/10986/8416?locale-attribute=en). Growing efforts to address environmental degradation can also be a source of transition risk, with potential impacts on India's competitiveness, e.g. as a result of shifts towards more sustainable supply chains.

Social risks. Public expenditures within the green transition have by their nature positive impact but also some inherent social risks. Such risks entail threats to livelihoods, energy access, public finances, and human development (https://assets.cdcgroup.com/wp-content/uploads/2021/07/09130404/Towards-a-just-transition-finance-roadmap-for-India_July-2021.pdf?id=1). Projects may have negative effects for the local communities. With large groups of rural and vulnerable populations, investments in climate mitigation and adaptation, as well as biodiversity conservation, requires safeguards to prevent community displacement and loss of livelihoods. In projects where large amounts of migrant workers are needed, such groups require particular attention as these often are in a vulnerable situation. India is listed as a Tier 2 country by the US State Department, meaning that it does not fully meet the minimum standards for the elimination of human trafficking but is making significant efforts to do so. By ITUC (International Trade Union Confederation), India is ranked as a country with no guarantees of workers' rights and where repressive laws have been used to codify repression of workers' rights. According to the same report, union leaders and workers claiming their rights, risk detentions or arrests.

Environmental strategies and policies

India is committed to environmental protection through its constitution (article 48-a), which establishes the state's responsibility for protecting and improving the environment and for safeguarding forests and wildlife. Starting with the Wildlife Protection Act in 1972, the Government of India has put in place many environmental policies and programmes. With regards to climate, the National Action Plan on Climate Change (NAPCC) was launched in 2008, with the aim of reducing the economy's emission intensity, improving energy efficiency, increasing the forest cover and developing sustainable habitats. The NAPCC has eight "missions" on climate change mitigation (solar energy and energy efficiency), adaptation and increasing climate knowledge. A core element of the NAPCC is co-benefits, meaning that climate policy is coupled with other policy goals (such as energy access and water security). Recent initiatives include the clean river programme Namami Ganga Mission and the National Clean Air Programme (NCAP). NCAP was launched in 2019 to address air pollution, with the goal of reducing particulate pollution by 20-30% relative to 2017 levels by 2024.

Greenhouse gas emissions

In 2021, India's greenhouse gas emissions amounted to some 2 839 Mt CO_2e (without LULUCF), making it the world's third largest emitter[2]. Following economic development, emissions have grown steadily over the last three decades, and in 2000, emissions were around 1 500 Mt CO_2e.

Meanwhile, emissions per capita are only 1.8 tonnes CO_2e/person, compared to an average 6.1 in the EU, 14.7 in the US and a world average of 4.5[3]. The energy sector accounts for 70% of India's national emissions, followed by agriculture (21%) and industrial processes (5%). Around half of energy sector emissions come from fossil fuel combustion for power generation (predominantly coal based), around a third from such combustion in the manufacturing and other sectors, and less than 10% from transport[4].

Agricultural emissions are primarily methane from livestock, but also some from rice cultivation. Emission reductions were achieved in 2017-19 in agriculture due to various initiatives such as the expansion of area under horticulture, solar pumps, micro-irrigation, and balanced feedstock[5].

With regards to industrial sectors, emissions and energy intensive sectors include cement production, the second largest globally, and iron and steel. The country also produces non-ferrous metals, chemicals and pulp and paper, in addition to a wide range of products, including textiles.

Climate change mitigation policies

Following up on the NAPCC, India adopted its Nationally Determined Contribution (NDC) under the Paris Agreement (2015), with the following targets:

i. Reduce the emission intensity of GDP by 33-35% by 2030 compared to 2005 levels
ii. Create an additional carbon sink of 2.5 to 3 billion tonnes of CO_2 equivalent through additional forest and tree cover by 2030
iii. Increase the share of non-fossil fuel based energy resources to 40% of installed electric power capacity by 2030

In August 2022, India submitted its updated NDC to the UNFCCC, with the following main targets, representing an increased ambition:

[2] Ibid
[3] CO2 emissions (metric tons per capita) | Data (worldbank.org)
[4] India National Inventory Report to the UNFCCC, 2020.
[5] INDIA_ BUR-3_20.02.2021_High.pdf (unfccc.int)

- Reach approximately 50% cumulative electric power installed capacity from non-fossil fuel-based energy resources by 2030, with the help of transfer of technology and low-cost international finance including from Green Climate Fund (GCF)
- Reduce the carbon intensity of the economy by 45% by 2030, compared to 2005
- Create an additional carbon sink of 2.5 to 3 billion tonnes of CO2 equivalent through additional forest and tree cover by 2030.
- Net zero emissions by 2070

India's third biennial update report submitted to the UNFCCC in 2021[6] shows a reduction in its emission intensity (tonnes CO_2e per unit of GDP) of 24% in 2016 compared to 2005 – it has been declining at a rate of 1-2% annually. Going forward, India is reporting internationally on progress towards its targets every second year. If the current annual rate is extrapolated by 1%, India would achieve a reduction in the interval of 39-40% by 2030 compared to 2005[7].

Renewable energy, including large hydro, has risen to represent 38% of installed power capacity (or 139 GW)[8], up from 30% in 2010[9], as India has implemented a large renewable energy expansion programme. However, the picture is different when it comes to power generation. According to data from India's Central Electricity Authority, India's coal-based generation accounted for 70% of power generation in the fiscal year 2021-2022. The thermal generation capacity consists of 90% coal, 8% gas and 2% oil. While the country is committed to increasing renewable energy capacity, India is still building new coal power plants. According to a report published by India's federal power ministry in June, India is expected to commission 10 new thermal power units in the fiscal year 2022-2023[10], of which some will be central government owned and other by various states.

Forest is estimated to account for some 20% of India's area.[11] Wildlife is traditionally viewed with tolerance in Indian culture, and conservation of specific habitats started in the 1970s, following the introduction of the Wildlife Protection Act in 1972. According to India's third biennial update report, the country's LULUCF sink (CO_2 removal) increased by 3.4% from 2014 to 2016, and by some 40% between 2000 and 2016.

Climate change adaptation policies

The government of India is well aware of the challenges caused by a changing climate and the extent to which it is particularly vulnerable to extreme weather events. Adaptation is covered by several missions under the NAPCC, and much of the responsibility for implementing these adaptation policies has been delegated to state governments, which all should have state actions plans (SAPCCs). India's National Adaptation Fund for Climate Change (NAFCC) supports adaptation in among other agriculture, water, forestry, livestock and ecosystems. The country has also undertaken numerous programmes focusing on adaptation in agriculture, in particular the National Initiative on Climate Resilient Agriculture.

Green bond framework

Based on this review, this framework is found to be aligned with the Green Bond Principles. For details on the issuer's framework, please refer to the green bond framework dated September 2022.

[6] INDIA_ BUR-3_20.02.2021_ High.pdf (unfccc.int)
[7] India-climate-change-Emissions-intensity.pdf (cseindia.org)
[8] India-climate-change-Emissions-intensity.pdf (cseindia.org)
[9] Installed capacity in India, 2000-2020, and projections up to 2040 in the Stated Policies Scenario – Charts – Data & Statistics - IEA
[10] India expected to commission 10 thermal coal power plants in 2022-23, add 7,010 MW | S&P Global Commodity Insights (spglobal.com)
[11] INDIA_ BUR-3_20.02.2021_ High.pdf (unfccc.int)

Use of proceeds

For a description of the framework's use of proceeds criteria, and an assessment of the categories' environmental impacts and risks, please refer to section 2.

Selection

A Green Finance Working Committee (GFWC) is established, which includes the Chief Economic Advisor (Chair), the Infrastructure Finance Secretariat (Secretary), the Ministry of Environment, Forests and Climate Change, the Ministry of New and Renewable Energy, a climate specialist from Niti Aayog[12] and the Ministry of Finance. The GFWC will meet at least twice a year. Ministries that are not currently part of the GFWC may be consulted when relevant, and also be represented on the GFWC.

The selection of eligible projects and expenditures will have the following steps:

1. The relevant ministry/department in charge of a project/programme meeting the framework criteria conducts an initial evaluation and submit an initial evaluation report to the GFWC for consideration.
2. The GFWC evaluates all submitted projects for their eligibility under the framework and their alignment with the framework's overall objectives. In their assessment, they will be guided on environmental and social aspects by the climate specialist from Niti Aayog as well as the representative from the Ministry of Environment, Forests and Climate Change. The GFWC may also consult sector experts to assess projects' eligibility. The Ministry of Finance oversees the evaluation process from the point of view of overall economic fitment.

According to the issuer, the projects with the highest environmental benefits will be prioritized. Any eligible green expenditure will be mapped to the relevant project category of the framework and to the UN Sustainable Development Goals, and must be in line with the framework "both in letter and in spirit". Further, any expenditure deemed eligible must align with the objectives of National Conservation Strategy and Policy Statement on Environment and Development, 1992; National Forest Policy, 1988; Policy Statement on Abatement of Pollution, 1992; and the National Environment Policy, 2006. Furthermore, any expenditure must adhere to the minimum social safeguards as accorded by the Constitution as well as Indian laws (such as The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013).

Finally, the expenditures must also align with the respective state's environmental and social objectives and will only be included if they run no risk of "double counting" through any other mechanism/financing instrument.

According to the issuer, controversial projects, including those facing local resistance will not be financed. The issuer further confirmed that environmental impact assessments are required for new industrial and infrastructure projects above a certain size or capacity additions above certain minimum thresholds.[13]

Management of proceeds

The Public Debt Management Cell (PDMC) in the Department of Economic Affairs, Ministry of Finance will be responsible for the management of the proceeds. Proceeds will be deposited to the Consolidated Fund of India, and a separate account dedicated to green bond proceeds will be created. The Ministry of Finance will set up a register to track green bond issuances and allocation to eligible projects, including a summary of project details, allocation of proceeds, expected climate and environmental impact, as well as any unallocated proceeds.

[12] The former Planning Commission, NITI-AAYOG is a resource centre that provides strategic policy support to the Government of India.
[13] http://www.environmentwb.gov.in/pdf/EIA%20Notification,%202006.pdf

The issuer does not expect that any proceeds remain unallocated. However, if any proceeds remain unallocated, they will be carried forward to successive years for investments in eligible green projects only.

The total value of eligible projects, assets and expenditures under the framework is expected to be larger than the issued amount. The GFWC will review allocation of proceeds to ensure that all proceeds are allocated within 24 months following issuance. If an eligible green project is cancelled or postponed, it will be replaced by another green project. The GFWC is in charge of monitoring any such changes to projects, as well as identifying any projects that no longer meet the framework criteria.

Reporting

The Government of India will issue a public report annually on its websites (www.finmin.nic.in and www.dea.gov.in) allocation of proceeds and associated environmental impacts, until full allocation of proceeds of outstanding green bonds. The report will include a description of projects financed, including their implementation status, amounts disbursed, the types of expenditures, share of refinancing vs. new financing, and amount of unallocated proceeds (if any). All financed projects will be listed in the report, while impact reporting will be done at project category level, across all green bond issuances. To the extent possible, impact indicators will cover both environmental benefits and social co-benefits (see details in table below). The GFWC oversees reporting under the green bond framework, under the coordination of the Ministry of Finance (Department of Economic Affairs). Allocation of proceeds will be reviewed by India's Controller ad Auditor General (CAG), which audits all public expenditures. External review may in the future be expanded to cover also impacts. The issuer has confirmed that the report will be transparent on the methodologies and assumptions forming the basis for the reporting.

According to the issuer, the metrics have been selected to provide an assessment of impact that is as objective as possible, with metrics that to a large extent are quantifiable and verifiable to a large extent. Relevant ministries will be involved in providing inputs, for example the Bureau of Energy Efficiency.

Potential impact metrics are indicated in the table below:

Green Bond Category	**Examples of potential metrics**
Renewable Energy	• Installed renewable energy capacity (in MW). • Annual renewable energy generation (in MWh). • Annual GHG emissions avoided in tons of CO_2e Social co-benefits (wherever possible to quantify): • Number of households benefitted • Number of under-privileged households benefitted • Number of jobs created
Energy Efficiency	• Number of energy efficiency equipment and appliances installed. • Annual energy savings (in MWh). • Annual GHG emissions avoided in tons of CO_2 emission.
Sustainable management of natural resources, land use and marine	• Area of land or ocean conserved/recovered (km^2). • Area (km^2) of marine/forest reserves under active monitoring.
Clean transportation	• Number of people who use new ecological public transport. • Number of km of new electric train/road lines created/maintained.

	• Annual GHG emissions avoided in tons of CO_2 emission. • Air quality improvement (PPM) Social co-benefits (wherever possible to quantify): • Employment generated – number of jobs created/supported • Number of MSMEs supported • Number of people with access to sustainable public transport systems
Sustainable Water and Waste Management	• Volume of water collected and/or treated (m^3). • Increased water efficiency of systems (% reduction in water consumption loss). • Number of households that have access to new potable water supply
Green Building	• Level of certification by property • Annual energy savings (in MWh). • Annual GHG emissions avoided in tons of CO_2e.

2 Assessment of Government of India's green bond framework

The eligible projects under Government of India's green bond framework are shaded based on their environmental impacts and risks, based on the "Shades of Green" methodology.

Shading of eligible projects under the Government of India's green bond framework

- Eligible expenditures are limited to government expenditures that occurred at most 12 months prior to issuance. Eligible expenditures are mainly grants, subsidies (both direct and indirect), but also some equity investments. Such equity investments are limited to the sole case of metro projects under 'Clean Transportation' category, where metro projects are implemented through Special Purpose Vehicles (SPVs) dedicated to metro investments.
- The Government of India will aim at allocating all proceeds within 24 months following issuance.
- The Government of India expects that the main project categories will be renewable energy, climate change adaptation, clean transportation, sustainable management of living natural resources and land use, as well as pollution prevention and control. It does not have any clear expectation on the specific distribution between these categories but has stated that it will prioritize projects that are already operational.
- The following exclusions apply:
    - Projects involving new or existing extraction, production and distribution of fossil fuels, including improvements and upgrades; or where the core energy source is fossil-fuel based
    - Nuclear power generation
    - Direct waste incineration
    - Alcohol, weapons, tobacco, gaming, palm oil industries
    - Renewable energy projects generating energy from biomass using feedstock originating from protected areas
    - Landfill projects
    - Hydropower plants larger than 25 MW
- The issuer has clarified that any projects indirectly supporting fossil fuel based technologies within power generation and transportation, such as energy efficiency at coal power plants, will not be eligible.

Category	Eligibility criteria	Green Shading and considerations
Renewable Energy *Environmental objective: Climate Change Mitigation, Net Zero Objectives*	• Investments in solar/wind/biomass/hydropower energy projects that integrate energy generation and storage. • Incentivizing adoption of renewable energy.	**Medium to Dark Green** ✓ Renewable energy is much needed in a 2050 perspective. India has ambitious renewable energy targets and is continuing to roll out its renewable energy expansion programme. ✓ While solar, wind and hydropower projects are considered Dark Green, the category is also assigned a Medium Green shade due to the inherent risks associated with bioenergy. Due to resource constraints and potential biodiversity concerns, biomass-based electricity is unlikely to represent a significantly scalable solution from a 2050 decarbonised energy perspective. ✓ The issuer has indicated that the focus of this project category will be solar, followed by wind and small hydro. Additionally, efforts will be made to explore the potential in tidal and ocean-current energy on a commercial scale through support to pilot projects. ✓ According to the issuer, biomass used in bioenergy plants receiving financial assistance and eligible under the framework will only be waste based, coming from agriculture, vegetable/fruit markets as well as from agroprocessing industries, which is positive. ✓ India's National Bioenergy Programme is a wide policy umbrella, which also supports the production of biomass pellets and briquettes. Some of these may be used for co-generation in coal fired power plants, as all coal plants in India have been mandated by the Ministry of Power to 5-10% co-firing with biomass pellets (from agricultural residues). ✓ Renewable energy projects may cause local environmental damages, such as negative impacts on biodiversity, water scarcity and deforestation, as well as conflicts about land and water resources. In India, for all large-scale infrastructure projects, an Environmental Impact Assessment is required, with

the need to obtain an environmental clearance from the Ministry of Environment and Forests. Conflicts may arise from the fact that some groups use areas for food and firewood collection without being part of the official economy, and thus are not always included when local risk assessments are carried out.

✓ In India, hydropower plants below 25MW (which are eligible under this framework) are categorized as small. Decisions on the development of such projects are taken at the state level, and each state has their own policies and procedures for such projects. Requirements on assessments of environmental impacts and on mitigating actions are thus expected to vary. The issuer has confirmed that the Central Act on Environmental Impact Assessment will be mandatory for all financed projects.

✓ Hydropower projects can entail significant emissions from both construction and from water reservoirs. The issuer has not confirmed whether renewable energy project will comply with a life cycle emissions threshold of 100g CO_2e/kWh, and no criteria have been set for power density (MW capacity per m2 of reservoir). According to one recent review[14], most Indian hydropower reservoirs carry low to medium risk in relation to GHG emissions, with small hydropower plants considered as a more sustainable alternative. We encourage the issuer to consider risks of emissions from reservoirs when assessing hydropower projects.

✓ Likely expenditures include financial assistance for roof top solar panels, solar-powered agricultural pumps, large scale solar power parks, support to R&D (pump storage and battery energy storage, green hydrogen), feed in tariffs for wind power, direct financial support to bioenergy plants, as well as the construction of electricity transmission infrastructure, connecting renewable energy generation assets to load centres, including in India's

[14] A state-of-the-art review of greenhouse gas emissions from Indian hydropower reservoirs - ScienceDirect

		Northeastern Region. By incentivizing the adoption of renewable energy at both small and larger scale, connecting renewable generation capacity to the grid and supporting research into new technologies, these expenditures should contribute to increasing India's renewable energy capacity and generation. ✓ We encourage the issuer to carefully consider emissions and other pollution across the life cycle for all technologies, including end of life considerations, such as the recyclability of materials.
Energy Efficiency *Environmental Objective: Climate Change Mitigation*	• Design and construction of energy- efficient and energy-saving systems and installations in government buildings and properties. • Supporting public lighting improvements (e.g. replacement with LEDs). • Projects to reduce electricity grid losses.	**Medium Green** ✓ Investments in energy efficiency are needed across all sectors, in particular in buildings and industry. ✓ The framework does not set any specific energy efficiency improvement threshold, but the focus on energy-savings systems, installations and lighting in public real estate constitutes important steps in a 2050 perspective. The issuer should be aware of the potential for rebound effects. The assigned shade assumes that energy efficiency measures within heavy industry are not financed. ✓ Investments in grid efficiency could also provide indirect support for fossil fuels given India's coal dependency and contribute to rebound effects. ✓ According to the issuer, likely eligible projects include technical upgrades to and construction of new electricity transmission systems, solutions to identify and reduce grid losses (in the context of the National Smart Grid Mission), and subsidies under the Energy Conservation Act.
Clean Transportation *Environmental Objective: Climate Change Mitigation*	• Promote public transportation including its electrification and transport safety. • Subsidies to adopt clean fuels like electric vehicles including building charging infrastructure.	**Medium to Dark Green** ✓ Electrification is expected to be the main focus of this project category, while investments related to biofuels, green hydrogen or Compressed Natural Gas (CNG) may also be eligible in the future.

- ✓ Electrification plays a key role in decarbonizing the transport sector, even in the context of India's coal-based grid. Research indicates that lifecycle emissions from electric modes of transportation are lower than fossil fuel based transportation, even for predominantly coal based electricity grids[15]. Renewable energy generation is expected to increase in India, and electric transport solutions do not in themselves lock in emissions as fossil fuel-based transport does. From a climate and resource efficiency perspective, public transport is preferable.
- ✓ To avoid lock in of obsolete technologies we encourage seeking zero emission technologies where feasible.
- ✓ While biofuel has a role to play in the path to net zero, careful considerations must be given to sustainable sourcing of the feedstock. The scaling up of feedstock production for biofuels could increase the risks of land use change while also threatening food security.

- ✓ The main likely expenditures include metro expansion projects in cities, electrification of, upgrading and expansion of railways, along with R&D expenditures in the field of sustainable biofuels (from agricultural and municipal waste). Electrification of the main routes of the railway network (Broad Gauge) is ongoing in India and is expected to be completed by 2023-2024.
- ✓ According to the issuer, rail infrastructure that is dedicated to fossil fuel transport (e.g. port/terminal connections) will not be eligible.

- ✓ The current focus of subsidies is on electric vehicles, but the issuer has indicated that eligible fuels may include biofuels or Compressed Natural Gas (CNG) in the future. CNG will only be eligible in the context of public

[15] A global comparison of the life-cycle greenhouse gas emissions of combustion engine and electric passenger cars - International Council on Clean Transportation (theicct.org)

		transportation projects; no subsidies for private vehicles running on CNG will be financed. ✓ According to the issuer, feedstock for any biofuel will not come from protected areas. While this is positive, there remain risks associated with direct and indirect land use change (including deforestation) that cultivation of crops for biofuel may cause. India's updated biofuel policy aims to increase blending rates to 20% ethanol by 2025 and 5% biodiesel by 2030. While the previous policy has focused on agricultural/industrial waste products, recent amendments allow for the use of food grains for biofuel production. The issuer has confirmed that biofuels based on food crops will not be eligible under the framework. ✓ For long lived infrastructure, such as public transport, climate resilience should be an important consideration in the planning and design phase.
Climate Change Adaptation *Environmental Objective: Climate Change Adaptation*	• Projects aimed at making infrastructure more resilient to impacts of climate change, as well as investments in information support systems, such as climate observation and early warning systems.	**Dark Green** ✓ In a 2050 perspective, investments in climate change adaptation and resilience are much needed, and India is expected to be particularly vulnerable to the impacts of a changing climate (see sector risk exposure box). Both investments in physical assets to improve their resiliency and observation and early warning systems are important to limit the damages caused by climate related weather events. ✓ The issuer has confirmed that the framework's general exclusion of fossil fuel related expenditures also applies to this project category. ✓ Construction projects can have substantial fossil fuel involvement and local environmental impacts, efforts should be made to minimize those. ✓ According to the issuer, eligible expenditures could include financial assistance to state and local governments in forest fire prevention and management measures, such as fire lines, engagement of fire watchers, water storage structure, conservation works and public awareness measures. Other

		likely expenditures include research activities to develop crops that are more climate change resilient (infrastructure and manpower).
Sustainable Water and Waste Management *Environmental Objective: Climate Change Mitigation*	• Promoting water efficient irrigation systems. • Installation/upgradation of wastewater infrastructure including transport, treatment and disposal systems. • Water resources conservation. • Flood defence systems.	**Light to Medium Green** ✓ Improving wastewater management and improving water efficiency are important from a climate perspective, both to reduce emissions, improve resiliency and also reduce negative local environmental impacts, such as water pollution. The interval of shades reflects the broad nature of the category and the absence of any specific thresholds. ✓ Untreated sewage threatens water quality, and new and or improved wastewater infrastructure, including treatment and disposal systems, are important to prevent pollution. Best practices include applying a circular economy approach to the water treatment process, by using as much of waste streams as possible such as utilizing sewage sludge for biogas production or reusing extracted nitrogen. ✓ Given the current inefficiencies in energy and water use in the Indian agricultural sectors, efforts to improve water and energy efficiency are welcome, but the specific climate impacts and risks will depend on the types of agriculture supported, the achieved improvement and local conditions. ✓ Flood defences constitute an important climate adaptation measure in areas prone to flooding or sea level rise. ✓ Construction and upgrades of wastewater infrastructure and construction of flood defences may involve fossil fuel usage, while emissions embodied in building materials also typically are significant. According to the issuer, eligible wastewater treatment and disposal systems will mainly run on electricity, but the transport of waste may involve partial usage of fossil fuels.

		Whenever possible, we encourage the issuer to make efforts to reduce emissions associated with materials. ✓ Likely expenditures include the AMRUT 2.0 programme, which aims at improving water quality and promoting rainwater harvesting, and the scheme "Per Drop More Crop", which focuses on efficient delivery and application of water at every farm to enhance productivity in agriculture. According to the issuer, the benefits are particularly high for water guzzling crops such as sugarcane, cotton and banana.
Pollution Prevention and Control *Environmental Objective: Climate Change Mitigation, Environment Protection*  	• Projects targeting reduction of air emissions, greenhouse gas control, soil remediation, waste management, waste prevention, waste recycling, waste reduction and energy/emission-efficient waste-to-energy[16]	**Light to Medium Green** ✓ This project category has two main elements, improved waste management on one hand, and efforts to reduce various types of pollution, on the other hand, including non-GHG emissions, which typically cause harmful local pollution. While we consider investments in waste recycling and energy and emissions efficient waste-to-energy to represent steps towards the 2050 vision in the Indian context, the broad definition of eligible pollution reduction projects constitutes a Light Green element. The shading assumes that no measures at coal power plants are financed. ✓ Since 2014, national policies, including the Swachh Bharat Mission, have been introduced with the aim of increasing sorting and recycling of waste, but additional efforts are needed. Recycling rates in India are currently low, and India's Central Pollution Control Board reports that about 70% of solid waste currently ends up in landfills, many of which are illegal, unregulated and causing local ground and water pollution, while also causing CO_2 and methane emissions. This highlights the need for continued efforts to move waste up the waste hierarchy, both from a climate, circular economy and wider environmental perspective.

[16] Feedstock will primarily include: Sewage, manure, wastewater, bagasse, biomass, wood pellets, etc.

		✓ Energy and emissions efficient waste-to-energy (incineration) facilities may be financed, but no emissions threshold has been set. Waste incineration generates and locks in emissions and may partly depend on fossil fuel use. Waste to energy is best combined with ambitious waste avoidance and recycling policies to ensure adherence to the waste management hierarchy. The issuer has confirmed that the waste hierarchy will be followed, with policies in place to sort waste and recycle the fractions that are recyclable. ✓ Likely eligible expenditures include the SBM-Urban 2.0 programme which targets water treatment and solid waste management in cities. According to the issuer, other likely eligible expenditures are air quality monitoring equipment and systems, as well as technologies to reduce non-GHG emissions from polluting industries.
Sustainable Management of Living Natural Resources and Land Use Environmental Objective: Natural Resource Conservation	• Environmentally sustainable management of agriculture, animal husbandry, fishery and aquaculture. • Sustainable forestry management including afforestation/ reforestation. • Support to certified organic farming. • Projects related to biodiversity preservation, including conservation of endangered species, habitats and ecosystems. • Research on living resources and biodiversity protection.	**Light to Medium Green** ✓ Reducing emissions from agriculture, forestry and other land use (AFOLU) is critical for a 2050 solution, as are land-based carbon removals. Projects can have significant co-benefits for climate adaptation and biodiversity but must be implemented with careful considerations for indirect and direct land use change, as well as adverse impacts on biodiversity, water, local communities, and food security. ✓ Similarly, conservation of biodiversity, natural ecosystems, and habitats can have substantial co-benefits for climate mitigation and adaptation due to critical ecosystem services including carbon sequestration, local climate regulation, soil stabilization, storm surge protection, etc. ✓ According to the issuer, a wide range of programmes have been proposed for funding under this project category, with objectives including forest and wetlands protection and restoration (e.g. Green India Mission, Forest Biotechnology), biodiversity conservation (e.g. Integrated Development of Wildlife Habitats), the Restructured Bamboo Mission (bamboo plantations

and value chain development), agroecology/organic agriculture (Paramparagat Krishi Vikas Yojana, Ecosystem Approach to Research, Technology and Agri-Habitats (Earth)), and R&D in bovine and plant genetics (e.g. Rashtriya Gokul Mission, National Safety Copy Plant Genebank).

- ✓ The issuer shared that it does not envisage conversion of natural ecosystems in association with projects and that direct land use change will be avoided unless required in special cases. The issuer has not elucidated on what special cases may entail but indicated that these would be decided by India's National Green Tribunal.

- ✓ Sustainable agriculture is a broad term with different interpretations depending on context but should minimize emissions, as well as maintain and enhance soil and water quality while conserving local biodiversity and ecosystems. According to the issuer, sustainable agriculture follows principles outlined in India's National Mission for Sustainable Agriculture,[17] which include i.a., water efficiency, improved farm practices and soil health, and nutrient management. The issuer has not specified any sustainable agriculture standards or certification schemes that will be used in its selection criteria.
- ✓ Organic farming has broad environmental benefits including local biodiversity preservation, but system-level impacts on greenhouse gas emissions remain uncertain due possible trade-offs with yield.
- ✓ India has two organic certification schemes: the National Programme for Organic Production (NPOP), and the Participatory Guarantee System of India (PGS-India).
- ✓ According to the issuer, support for animal husbandry could include projects that improve the climate resilience of dairy cattle and reduce methane emissions from enteric fermentation. Although such measures could improve the carbon intensity of dairy production, bovine and other livestock

[17] https://agricoop.nic.in/sites/default/files/National%20Mission%20For%20Sustainable%20Agriculture-DRAFT-Sept-2010.pdf

production still has a much higher carbon footprint than plant-based food, and the issuer has not indicated any best practice requirements for manure management, a significant emissions source.

- ✓ Livestock feed production can be emissions-intensive especially if linked with land use change. According to the issuer, India's cattle are primarily produced by small rural households that feed cattle on local fodder, minimizing this risk.
- ✓ The issuer shared that expenditures on plant genetics include collection and conservation of germplasm, with objectives including the development of climate resilient crop varietals—a key aspect of climate adaptation for the agricultural sector.

- ✓ According to the issuer, sustainable forest management is forestry implemented in accordance with India's 2018 Draft National Forestry Policy,[18] which outlines goals of maintaining one-third of India's land under forest and tree cover. It promotes afforestation and reforestation, biodiversity conservation, and improving the productivity of forest plantations. The policy provides for adoption of sustainable forestry certification schemes, but these remain unspecified in the context of the framework.
- ✓ It is positive that according to the issuer, projects under the Green India Mission (the main governmental forestry programme) will be implemented using a landscape approach and with consideration for forest-dependent community livelihoods.
- ✓ According to the issuer, standards have yet to be defined for sustainable bamboo production. The issuer shared that forestry projects would include the development of industrial bamboo parks for the production of bamboo. The end uses of bamboo could range from replacing plastics in goods manufacturing to use as a fuel, including for co-firing in coal-fired power plants.

[18] https://moef.gov.in/wp-content/uploads/2019/05/Inviting-comments-from-concerned-Ministries-on-Draft-National-Forest-Policy-2018.pdf

- ✓ Research suggests that bamboo has potential as a sustainable biofuel due to its ability to grow on degraded land, rapidly sequester and store carbon, but this may be impacted if grown on land converted from agricultural use or natural ecosystems. Further, if not managed properly, bamboo may become an invasive species with detrimental local ecosystem impacts.[19]

- ✓ According to the issuer, support for fisheries under the framework is to promote their sustainable management and conservation, in line with the draft National Fisheries Policy 2020,[20] and that investments to increase the output or exploitation of fisheries are not envisaged.
- ✓ Fisheries in India are predominantly small scale. Demand from fishmeal and fish oil producers for bycatch has incentivized unsustainable fishing practices among Indian fishers.[21] Sustainably managed fisheries are vital for the health of aquatic and marine ecosystems, which in turn can have climate benefits (see comments under "Terrestrial and Aquatic Biodiversity Conservation").
- ✓ The issuer informs that India is a signatory to the June 2022 WTO Agreement on Fisheries Subsidies, which prohibits subsidies for illegal, unreported and unregulated (IUU) fishing, for fishing of overfished stocks, and for fishing in unregulated high seas.[22] Note also that as a developing country, India benefits from a two-year 'peace clause' under the agreement that exempts it from WTO dispute settlement proceedings related to the agreement. The issuer has not further specified any international or domestic sustainability standards, certifications, or other criteria governing the eligibility of fisheries for support under the framework.
- ✓ The effectiveness of the WTO agreement and strategies outlined in the National Fisheries Policy for reducing overfishing depends greatly on effectiveness of enforcement, which is generally very challenging. Note that

[19] https://www.cifor.org/publications/pdf_files/articles/ABaral1807.pdf
[20] https://dof.gov.in/sites/default/files/2020-12/Policy_0.pdf
[21] http://changingmarkets.org/wp-content/uploads/2019/10/CM-WEB-FINAL-FISHING-FOR-CATASTROPHE-2019.pdf
[22] https://www.wto.org/english/res_e/booksp_e/implementfishagreement22_e.pdf

		the WTO agreement only applies to marine wild-caught fisheries, i.e. excluding inland fisheries. ✓ The issuer has clarified that direct support for fish farming (aquaculture) is not included in the scope of the framework, but proceeds may instead support capacity building for sustainable management practices to minimize negative environmental impacts of aquaculture. However, the issuer does currently not have any such projects, but these may be considered in the future. Specific definitions of what such sustainable practices entail have not been defined at this stage.
Green Buildings Environmental Objective: Climate Change Mitigation	• Projects related to buildings that meet regional, national or internationally recognized standards or certifications for environmental performance.	**Light Green** ✓ The most widely used green building rating systems in India are Leadership in Environmental Design (LEED), Green Rating for Integrated Habitat Assessment (GRIHA) and the Indian Green Building Council (IGBC). ✓ Whether building energy codes are mandatory in India varies from state to state, but for most parts of the country, they are mandatory. The 2017 Energy Conservation Building Code establishes minimum energy performance levels, as well as voluntary certification classes for building with performance exceeding these levels. Enforcement of the code is the responsibility of states. ✓ The GRIHA certification covers various environmental aspects, such as water efficiency, life cycle assessment and energy monitoring, with water management and energy optimization being weighted most in the calculation of the final score. Mandatory requirements include compliance with the energy conservation building code. The Indian Green Building Council (IGBC) has developed its own rating systems. Minimum requirements apply to all buildings, and the council estimates water savings in the range of 30-50% and energy savings in the range of 20-30% compared to a standard building.

		✓ While such certifications may be positive, their point-based structure does not guarantee low climate impact buildings. ✓ Buildings with fossil fuel based heating or water heating systems may be eligible for investment; these should be phased out as quickly as possible. ✓ According to the issuer, eligible buildings will have a rating that is above the average across the mentioned rating systems. Without any firmer criteria reflected in the framework, there is uncertainty on the environmental performance of the eligible buildings, as well as the types of buildings that are going to be financed. Nevertheless, we expect the use of the green building certifications to contribute to financing buildings that represent an improvement compared to the standard building in the Indian context.
Terrestrial and Aquatic Biodiversity Conservation Environmental Objective: Biodiversity Conservation	• Projects relating to coastal and marine environments. • Projects related to biodiversity preservation, including conservation of endangered species, habitats and ecosystems.	**Light to Medium Green** ✓ India's vast coast is home to a variety of ecosystems, including mangrove swamps, see grass beds and coral reefs. These marine and coastal ecosystems host high numbers of animal and plant species, for which overexploitation constitutes a threat. ✓ Nature and biodiversity conservation is important from a climate perspective, especially when contributing to maintenance or increase of carbon stocks. The ocean and its ecosystems store carbon and there is potential to increase this carbon sequestration. Oceans are also a key element of the global climate system, and ocean acidification represent a threat to marine biodiversity. Further, functioning terrestrial, aquatic and marine ecosystems improve resilience to physical climate impacts, including storm surge protection, soil stabilization, temperature regulation, etc. ✓ The absence of more specifically defined eligibility criteria within this project category is reflected in the assigned interval of shades. This interval relies on the assumption that no new port development, industrial development, sea bed mining nor shipping activities will be financed.

Table 1. Eligible project categories

3 Terms and methodology

This note provides CICERO Shades of Green's second opinion of the client's framework dated October 2022**.** This second opinion remains relevant to all green bonds and/or loans issued under this framework for the duration of three years from publication of this second opinion, as long as the framework remains unchanged. Any amendments or updates to the framework require a revised second opinion. CICERO Shades of Green encourages the client to make this second opinion publicly available. If any part of the second opinion is quoted, the full report must be made available.

The second opinion is based on a review of the framework and documentation of the client's policies and processes, as well as information gathered during meetings, teleconferences and email correspondence.

'Shades of Green' methodology

CICERO Shades of Green second opinions are graded dark green, medium green or light green, reflecting a broad, qualitative review of the climate and environmental risks and ambitions. The shading methodology aims to provide transparency to investors that seek to understand and act upon potential exposure to climate risks and impacts. Investments in all shades of green projects are necessary in order to successfully implement the ambition of the Paris agreement. The shades are intended to communicate the following:

Shading	Examples
Dark Green is allocated to projects and solutions that correspond to the long-term vision of a low-carbon and climate resilient future.	Solar power plants
Medium Green is allocated to projects and solutions that represent significant steps towards the long-term vision but are not quite there yet.	Energy efficient buildings
Light Green is allocated to transition activities that do not lock in emissions. These projects reduce emissions or have other environmental benefits in the near term rather than representing low carbon and climate resilient long-term solutions.	Hybrid road vehicles

The "Shades of Green" methodology considers the strengths, weaknesses and pitfalls of the project categories and their criteria. The strengths of an investment framework with respect to environmental impact are areas where it clearly supports low-carbon projects; weaknesses are typically areas that are unclear or too general. Pitfalls are also raised, including potential macro-level impacts of investment projects.

Sound governance and transparency processes facilitate delivery of the client's climate and environmental ambitions laid out in the framework. Hence, key governance aspects that can influence the implementation of the green bond are carefully considered and reflected in the overall shading. CICERO Shades of Green considers four factors in its review of the client's governance processes: 1) the policies and goals of relevance to the green bond framework; 2) the selection process used to identify and approve eligible projects under the framework, 3) the management of proceeds and 4) the reporting on the projects to investors. Based on these factors, we assign an overall governance grade: Fair, Good or Excellent. Please note this is not a substitute for a full evaluation of the governance of the issuing institution, and does not cover, e.g., corruption.

Assessment of alignment with Green Bond Principles

CICERO Shades of Green assesses alignment with the International Capital Markets' Association's (ICMA) Green Bond Principles. We review whether the framework is in line with the four core components of the GBP (use of proceeds, selection, management of proceeds and reporting). We assess whether project categories have clear environmental benefits with defined eligibility criteria. The Green Bonds Principles (GBP) state that the "overall environmental profile" of a project should be assessed. The selection process is a key governance factor to consider in CICERO Shads of Green's assessment. CICERO Shades of Green typically looks at how climate and environmental considerations are considered when evaluating whether projects can qualify for green finance funding. The broader the project categories, the more importance CICERO Shades of Green places on the selection process. CICERO Shades of Green assesses whether net proceeds or an equivalent amount are tracked by the issuer in an appropriate manner and provides transparency on the intended types of temporary placement for unallocated proceeds. Transparency, reporting, and verification of impacts are key to enable investors to follow the implementation of green finance programs.

Appendix 1: Referenced Documents List

Document Number	Document Name	Description
1	Sovereign Green Bond Framework	India's green bond framework, dated October 2022
2	List of input compilation edited Green Bonds	List of eligible projects and programmes under green bond framework
3	List of additional projects which may be funded through the SGrBs	List of additional eligible projects and programmes under green bond framework
4	National Inventory Report	Reporting of national emissions to the UNFCCC, covering data up until 2016.
5	Third Biennal Update Report	India's biennal update report to the UNFCCC, submitted in 2021.
6	Energy Conservation Building Code 2017	Regulation on Minimum energy performance levels for buildings.
7	National Mission For Sustainable Agriculture - Strategies for Meeting the Challenges of Climate Change 2010	Description of India's national approach to sustainable agriculture
8	Draft National Forest Policy 2018	
9	GRIHA Manual V.2019	Introduction to National Rating System – GRIHA for green buildings
10	Draft National Fisheries Policy 2020	
11	Second National Communication to the UNFCCC, dated 2012.	

12	Note on Green Bonds Framework	Note on Indian regulatory context, provided by the issuer

Appendix 2:
About CICERO Shades of Green

CICERO Shades of Green is a subsidiary of the climate research institute CICERO. CICERO is Norway's foremost institute for interdisciplinary climate research. We deliver new insight that helps solve the climate challenge and strengthen international cooperation. CICERO has garnered attention for its work on the effects of manmade emissions on the climate and has played an active role in the UN's IPCC since 1995. CICERO staff provide quality control and methodological development for CICERO Shades of Green.

CICERO Shades of Green provides second opinions on institutions' frameworks and guidance for assessing and selecting eligible projects for green bond investments. CICERO Shades of Green is internationally recognized as a leading provider of independent reviews of green bonds, since the market's inception in 2008. CICERO Shades of Green is independent of the entity issuing the bond, its directors, senior management and advisers, and is remunerated in a way that prevents any conflicts of interests arising as a result of the fee structure. CICERO Green operates independently from the financial sector and other stakeholders to preserve the unbiased nature and high quality of second opinions.

We work with both international and domestic issuers, drawing on the global expertise of the Expert Network on Second Opinions (ENSO). Led by CICERO Shades of Green, ENSO contributes expertise to the second opinions, and is comprised of a network of trusted, independent research institutions and reputable experts on climate change and other environmental issues, including the Basque Center for Climate Change (BC3), the Stockholm Environment Institute, the Institute of Energy, Environment and Economy at Tsinghua University, the International Institute for Sustainable Development (IISD) and the School for Environment and Sustainability (SEAS) at the University of Michigan.

Environmental Finance
Bond Awards
2022
Winner
External assessment provider of the year

- **2021 Largest External Reviewer,** Climate Bonds Initiative Awards
- **2020 External Assessment Provider Of The Year,** Environmental Finance Green Bond Awards
- **2020 Largest External Review Provider In Number Of Deals,** Climate Bonds Initiative Awards
- **2019 External Assessment Provider Of The Year,** Environmental Finance Green Bond Awards
- **2019 Largest Green Bond SPO Provider,** Climate Bonds Initiative Awards
- **2018 External Assessment Provider Of The Year,** Environmental Finance Green Bond Awards
- **2018 Largest External Reviewer,** Climate Bonds Initiative Awards
- **2017 Best External Assessment Provider,** Environmental Finance Green Bond Awards
- **2016 Most Second Opinions,** Climate Bonds Initiative Awards